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28 APRIL 1987

USSR Report

INTERNATIONAL AFFAIRS

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ECONOMIC CRISIS SEEN IN CAPITALIST WORLD

Moscow SELSKAYA ZHIZN in Russian 7 Feb 87 p 3

[Article by political reviewer Gennadiy Shishkin: "The Barometers of Capitalism Indicate a 'Storm'"]

[Text] The ominous specter of economic collapse is wandering about in the countries of the capitalist world. The well-known American economist John Kenneth Galbraith, the author of the book "Velikiy Krakh" [The Great Collapse] writes that the threat of a crisis on the scale of 1929 hangs over the United States. [F. Kerret], a large financier from Wall Street, echoes him: "I think that we have now come close to 1929."

The barometers of capitalism are now indicating a "storm". The rapid fall of the dollar's value -- on the average by 40 percent -- testifies to this. The American newspaper CHICAGO TRIBUNE is sounding the alarm in this connection, thinking that "the Reagan Administration is playing a highly refined but dangerous game of naked economic intrigue by permitting the dollar's value to fall with respect to other currencies."

The CHICAGO TRIBUNE is correct. The Reagan Administration indeed organized the fall of the dollar's value itself. The fall of the U. S. ability to compete in world markets, as a result of which the balance of trade deficit rapidly grew during all of the time since Reagan came to power and which reached a catastrophic size -- 169.8 billion dollars -- in 1986, compelled it to do this. By lowering the dollar's value, the administration hoped to correct the situation, counting on the fact that it would lead to a drop in the price of American goods in foreign currency and to an increase in the prices of foreign competitors in dollars.

As a matter of fact, however, these calculations were not justified. With respect to the currencies of the main competitors of the United States -- the West German mark and the Japanese yen -- the dollar has recently fallen by 48 and 42 percent, respectively. The American trade deficit, however, not only did not decrease, it grew to 58.6 billion dollars in trade with Japan and to 32.7 billion dollars in trade with Western Europe (the lion's share of this deficit is in United States-FRG trade).

The CHICAGO TRIBUNE writes the following about the causes of this phenomenon: "With all other conditions being equal, the prices for imported goods, which are being imported into the United States from the entire world, should theoretically increase with the drop in the dollar's value. And conversely, the prices for U. S. goods in other countries should theoretically increase by a corresponding amount.

"However, it does not always turn out that way in practice. Japanese firms, for example, having captured an additional share of U. S. markets when the dollar was strong, did not raise their prices by an amount equivalent to the drop in the dollar's value. They prefer to lower their profits in order to preserve their markets."

The reasoning of the American paper is not devoid of foundation. At the same time, the main reason for the drop in the ability of the United States to compete in world markets -- the excessive burden of the arms race foisted on the country by the Reagan Administration --is passed over in silence in it. Since it has come to power, the United States has expended 1.3 trillion dollars for military purposes. This has led to an increase in the budget deficit which was 221 billion dollars during the 1986 fiscal year alone.

By resorting to loans to cover deficits of such enormous scales, the American government is reducing financial resources for new capital investments. This in turn slows down the modernization of industry, decreases labor productivity and leads to a drop in the ability of American goods to compete in world markets.

That, which is now occurring with the dollar and the deficit in the American budget and balance of trade, is a significant example of how the nonproductive squandering of masses of human labor and of enormous raw material, energy and other resources for military purposes can undermine the economy of even such a rich country as the United States. Occupying first place among the 13 developed capitalist countries based upon the level of militarization of the economy, the United States is, at the same time, in 11th place based on the real growth rates of gross domestic product; in 13th -- based on the percentage of capital investments in gross domestic product; in 11th -- based on the increase in labor productivity in the processing industry; and in first place -- based on the level of unemployment.

Representing a very striking manifestation of the parasitism of the descending phase of capitalist development and putting humanity on the verge of catastrophe, militarism is undermining not only the economy of the United States but also those of other Western countries and is distorting the progress of economic processes considerably. According to the calculations of American experts, it's as if the U. S. economy loses a year's production volume every 12-14 years because of the burden of military expenditures.

That is why it is no accident that ideas and the practical application of the civilian reconversion of military industry and the analysis of the interdependence between disarmament and development evoke such lively interest in

the world. According to the calculations of specialists, the implementation of the proposals, which are contained in the 15 January 1986 declaration of M. S. Gorbachev, would provide the United States with a savings of approximately one trillion dollars by the year 2000 and Western Europe -- approximately 300 billion dollars. The refusal to perform research on the "Star Wars" program from 1986 to 1989 would alone permit approximately 23 billion dollars to be saved. In the meantime, however, the military budget will be increased by more than 50 billion dollars during 1986 alone by reducing social programs.

The advocates of the arms race often justify it by alleging that military expenditures contribute to the elimination of unemployment and provide the workers with a piece of bread. These pseudo-arguments do not have anything in common with reality. Life shows that the arms race does not only not solve unemployment but even increases it -- and unemployment is the most critical problem of capitalism. The fact of the matter is that the expansion of modern-day military production, which is aimed at producing technically complicated weapons and which is noted for high capital-intensiveness, primarily requires individual categories of qualified specialists in a narrow circle of branches.

The research, which specialists of various countries are conducting, shows that resources, which are expended on constructing housing and improving the educational and health care systems, create far more jobs than the production of machines and weapons of death. According to the calculations of the U. S. government's Bureau of Statistics, one billion dollars of capital investments means the appearance of 187,000 new jobs in education; 139,000 -- in health care; 100,000 -- in construction; and only 76,000 -- in military industry. Even FORTUNE magazine, an organ of American big business, admits: "The military industrial policy is not noted for rationality. According to the calculations of economists, identical-size capital investments in the civilian economy will create approximately 25 percent more jobs."

In light of these facts, one should not be surprised that the increase in the gross national product of the developed capitalist countries is steadily dropping. Unemployment is growing at catastrophic rates. According to a report that was prepared by a number of U. S. trade union, religious and youth organizations, approximately 8.5 million Americans are listed as unemployed. If one also considers those, who have given up hopes of finding work, and those, who are compelled to work an incomplete day, the actual number of unemployed is 15 million. The situation is even worse in England -- the oldest capitalist country. The unemployed there number more than three million. The situation is no better in Italy where 60 percent of the youth are without work.

The English newspaper FINANCIAL TIMES writes in this regard: "Unemployment of this scale undoubtedly means that the economies of the Western European countries are not noted for health." In revealing the real state of affairs regarding the social significance of the chronic unemployment which is an integral feature of the capitalist mode of production, the FINANCIAL TIMES cynically writes: "The unemployed should pay ransom for the right to receive work, agreeing to work for a wage which would permit the companies to obtain higher profits."

Without having available positive goals and reference points that reflect the interests of the working masses, capitalism has led the entire process of social development into a blind alley; and the policy of unrestrained militarism, to which it has given birth, has threatened the existence of civilization itself. The seriousness of the danger, which is hanging over humanity, requires from all people of good will the doubling and tripling of their efforts in the struggle to halt the arms race and the fight for a world without weapons and war.

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ARBATOV INTERVIEWED DURING INDIAN TRIP

Volatile Situation

Madras THE HINDU in English 28 Nov 86 p 8

[Text]

QUESTION: What is your assessment of the most recent developments in our region, specifically the decision by the U.S. to supply Pakistan with the AWACS, the Pakistan bomb, the confirmation of U.S.-Pakistan security links in the form of ground facilities for American surveillance and communications?

ANSWER: I am not a specialist in the region, I study the U.S. really. What I think in a more philosophical way is that the U.S. had an unusual and unique time after World War II when they had a monopoly of nuclear weapons and when their major competitors, Japan and Europe, were in a bad way, and the USSR was in ruins with 20 million deaths, etc. Somehow it brought back the eternal dream of the manifest destiny of the U.S. Then the situation started to change, we made up the gap in nuclear weapons. During the Cuban missile crisis we had 300 warheads and they had about 5,000 and despite that they could not dream of starting a nuclear war. Also we made considerable economic progress in the 1950s and 1960s and so did their allies in Western Europe.

At around this time, there was also a great crisis of old empires and the Americans hoped that because of their strength they could replace them. They were for the 'open door' and you are for this when you are stronger; but then it turned out that many of the ex-colonial countries were not so timid and they wanted to build their future themselves with their own mistakes. They are today nobody's countries, they are their own masters and they have become mature as well. Then the whole U.S. policy ran into difficulties maybe with or without the Vietnam war which was like a catalyst. This brought about a new understanding where the U.S. remained a great power but was cut to proper size by history and by events. This was very difficult, very painful for many Americans to understand. This process of adjustment was very painful for the U.S. which had lived with a feeling of complete security between two oceans with militarily weak rivals and friendly neighbours. And suddenly the Americans woke up to find that they were as vulnerable as we have been in our history and in the economic field too they understood that they were no longer the leaders. The U.S. would have remained a great country but a country without imperial dreams with an understanding of what it could do and what it couldn't. But it was very difficult for many to come to grips with this and there were dormant feelings in many Americans of their exceptionalism and manifest destiny. I think Reagan brought this to the surface. And this is what brought him to the surface as well. It is like the counter-reformation, it is an attempt to play back history... and so we have lived for the last six years with a group of people wanting to replay history, to bring back military superiority, and to bring back the role of military policeman of the world. Hegel has said history repeats itself once as a tragedy and another time as a farce. The comedy in Iran recently points to this and near Iran is Pakistan.

Pakistan's role

Q: Do you see the developments as indicative of the cooption of Pakistan into the world-wide U.S. security system with this AWACS etc.?

A: It (the AWACS) can look here and there. I think there is a lot of technological-militaristic romanticism. They think this can change the facts of life but it hardly will. The Americans tried to do it with Iran but what happened? I'm not sure what they are doing for Pakistan makes it more stable. It actually destabilises the region. Of course it may be part of a grand design to weaken India just as they tried to do it to us by the arms race and the Strategic Defence Initiative. Giving

more and more sophisticated arms to Pakistan may also destabilise India which was never a country that they trusted. But I don't want to go into this because I don't want to sound as though I am sowing seeds of more distrust between India and the U.S. than already exists. That is not our policy....

I would say that most Americans would abhor Pakistan becoming a nuclear power. They are afraid. Their leadership, begging your pardon, is tremendously illiterate. Even in the sense of strategy it doesn't understand the viper's nest it is creating there.

Q: In this context will the USSR reconsider its decision to withdraw from Afghanistan in a unilateral fashion?

A: We don't say we will do so unilaterally. We came in at the invitation of the Government of Afghanistan and we shall withdraw our troops but not simply without any conditions but as part of a settlement which will include some conditions: stopping interference in Afghanistan's internal affairs which comes mainly from Pakistan and is funded by the U.S. I think that the Pakistanis have already started to understand that it has become dangerous for them as well. It destabilises their Government with all the tribal feuds that you see

Q: The U.S. has been insisting that the regional issues and human rights should form part of the overall arms control package. Why hasn't the USSR insisted that the winding down of American involvement in Afghanistan or the winding down of the Rapid Deployment Force be included in such discussions?

A: We maintain that this is part of an American game. It should have been understood. Here we were,in the midst of important negotiations, a treaty to save the very concept of arms control,the ratification of SALT II to prevent the breakout from all constraints and there was, according to us, a mutual understanding that this had to be settled. The U.S. Government, not because it wanted to stop the arms race, but because it felt pressure since 1982, agreed to negotiations which ran into a stalemate. These negotiations we understood were the number one problem to be discussed. Then they played the usual trick of substituting the real agenda by something artificial by saying that just as important as the main thing were some regional problems and human rights issues and they tried to create an impression that we were against the discussion of such problems. We said we are not against them but not on American terms because when they speak about regional problems they mean breaking the neck of Nicaragua, or how to create a deeper impasse in Afghanistan or support Savimbi,(the UNITA leader) in Angola. They did not think of South Africa or a political solution in Afghanistan or the West Asia where the most dangerous situation exists or the Iran-Iraq war. No, they helped Iran as we see. Then you cannot discuss everything in 1-1/2 days you have many difficult problems and obstacles to overcome and then they say that in order to solve this problem we have to solve 10 additional problems. We said we're ready to discuss but let's not shy away from this main problem of survival of the human race.

Links with Khomeini

Q: Will you comment on the recent U.S. attempts to build bridges with the Khomeini Government in Iran?

A: This episode is one in a succession of lies brought forward in the past few months,the disinformation campaign against Libya, then this guy was caught (Hasenfus, the American who was shot down in Nicaragua while dropping supplies to the Contras), then their behaviour after Reykjavik, how they lied. We don't have one version of Reykjavik but 10 official versions of their salesmanship. The American people and the world must think about what kind of people we have to deal with, what policy we have to deal with and what these people are prepared to do. They are prepared to intervene in a war which is considered senseless tremendously dangerous from the point of view of its consequences, which has cost hundreds of thousands of lives. But these were not American lives so they don't bother about it. And here they did not even adhere to their own constitutional rules. It is like a farce really, these false documents, lies, disguises etc.

Q: Why has this war persisted?

A: It is often forgotten as to how the war started. It is the duty of everyone to do something. I can see the difficulties now. It has a legacy of emotion, bitterness. It is everyone's duty not to encourage it. I'm sorry the U.S. hasn't followed this golden rule. The late Olof Palme tried and he told me several times about the problems... but he didn't succeed.

Q: What's the USSR's role in all this?.

A: We are against the war of course, wholeheartedly, and we tried to use the modest influence we have with both parties to find a way for a political settlement and this is not only our wish but our interest just as it would be of any decent nation in the region and around the world. If this war lasts longer it will not only result in more bloodshed and suffering but could spill over

Q: There is a lot of talk of General Secretary Mikhail Gorbachev's Asia-Pacific initiative. If I recollect, the ideas proposed at Vladivostok were put in general terms rather than in any specific manner. How do you envision it? Like the Helsinki accord?

A: I can speak on broad terms as to what can resemble Europe and what cannot... We had a situation in Europe where there were an unprecedented number of weapons and some of the biggest armies in peacetime were lined up against each other.This was obviously dangerous. Also we had in Europe, an unprecedented infrastructure of bilateral and multilateral negotiations and re-

lations as well as agreements. Both the sides created a precarious balance. In Asia-Pacific, we have much more recently entered a stage of a threatening militarisation. You have the American fleet, sea-based cruise missiles in particular, and we have our own response to this. You have other hotbeds of the arms race and tension. West Asia, the Gulf, South-East Asia, South Asia, Korea, are all flashpoints.

So our thinking was that this is not normal, this can develop into a very dangerous situation. We must at least initiate moves to discuss security in this region as no one else has taken the initiative. Most of the countries in this area are not actually involved in the process of discussing arms control, disarmament, security issues. So we brought forward in Vladivostok this idea but not as an idea to create a mirror image of what has happened in Europe. By the way in Europe the idea came forward in 1965 and the treaty was signed in 1975, so it took quite some time but we brought it forward as an idea because we understand that there are many more conflicts here. Europe is more or less stable. Though you have revanchist forces in Germany and some other countries the Governments at least don't claim territories of other countries.

Here it is different. Everything is in flux, a very volatile situation prevails. We understand that it is much more difficult, there are many more countries, bigger regions, different systems etc. You need many more participants to start the process. There are many people in the Soviet Union who believe that India can start the process and carry the torch so as to say and generate new ideas, but the decision is India's. We of course will discuss this with many countries and have already held consultations with Japan, People's Republic of China, etc. To once again state the issue, we don't want to impose on Asian nations some grand design of ours. We aren't so naive! No one can claim that we have any blueprint for so complex an arrangement that any Asia-Pacific security arrangement may involve. But we do think that we can't sit and watch the danger arising.

Ties with China

Q: The USSR has taken several steps to improve relations with the People's Republic of China. The U.S. has of course good relations with the PRC for some time now. Recently they have concluded an agreement for the transfer of some military technology and American ships called on Quingdao after Weinberger's (the U.S. Defence Secretary) visit. How do you envisage the situation developing?

A: You are again asking me of a country that I don't know much about. It takes a lifetime to understand a country as big as China, though I was there a year ago and I am very much interested as anyone. My feeling is that that people who now play a role in Chinese policy understand that their country has a lot of things to do, a lot of problems to overcome, and I think and indeed I hope that they have made a list of their priorities. The highest on this list will be internal development, making up the gap between their under-development and the developed countries. They have not done badly in the past few years and I think they understand the need for a good international environment. I think in this sense they have a feeling that they understand that their relations with the USSR are of crucial importance, much greater than some military technology they import from the U.S and I understand also that China has very complicated relations with its southern neighbours --with Vietnam or India. But if my reading is correct about their understanding of their priorities then these problems can be solved especially in a broader context of Asian-Pacific security.

Q: There are some fears expressed in this country that since Indo-Soviet ties grew at the time of the Sino-Soviet rift, your rapprochement will result in some distancing of the USSR from India. However, the coincidence of the growth of Indo-USSR ties in the 1950s and the '60s with the Sino-Soviet rift is there.

A: We are against balance of power type of politics. We think it doesn't work these days. I have to answer this question very often in relation to Western Europe: our policy doesn't aim to tear away Western Europe from the U.S. We are realists and we know that they have tremendous mutual interests, as well as a deep economic, political and cultural relationship. We want to build a good relationship with Western Europe, also with the U.S. and with China or anyone but not at the cost of our relationship with India which can play I think a very great role in the future, even greater than now. I think in general it (balance of power) doesn't work.It does so only in the minds of some arm-chair statesman like Kissinger.

Interdependent world

The world is so interdependent now and so small that there is no place for balance of power games. I would be dismissive of this kind of logic. Our relations with India are very high in our priority not because we have bad relations with China.

The coincidence you spoke of, quite honestly, arose from the fact that we clearly misunderstood the nature of India's freedom struggle. We were in general very naive about what was happening in former colonies. Revolutionaries tend sometimes to be naive. So we thought that if it wasn't something like our own revolution it was not the real thing. There was this misunderstanding but we came very early in the Mid-Fifties to the conclusion that our understanding was not correct and this changed our relations with India, not the fact that our relations with China were deteriorating. And now with

Gorbachev we have reached a new stage in our understanding of the developing world. And this will be more pronounced now. It is not by chance or accident that Rajiv Gandhi was the first foreign statesman to be received by Gorbachev and I think that his state visit, aside from those to socialist countries, to India speaks about the importance of Indo-USSR relations.

We have tried to bring our political and military relations in line with this understanding of the world. It was not by chance that at the 27th Party Congress a new concept of security was brought forward: That security was not limited to the disarmament field; though this is very important it has to be pursued also in other fields—political, which means accepting the principles of peaceful coexistence where you recognise the right of countries to decide their own path of development and also find solutions to regional problems and economic which includes the debt problem and the plight of developing countries. So we recognise that there can be no security if you don't seek solutions to these issues. So there are new concepts of security and we are actually witnessing just the beginning of this phase of the Soviet understanding of the world.

New Security Concept

Madras THE HINDU in English 29 Nov 86 p 8

[Text]

The following is the second and final instalment of the interview with Mr. Georgi Arbatov, Director of the USA and Canada Institute of the USSR Academy of Sciences. The first part of the interview, conducted by Our New Delhi Special Correspondent, Manoj Joshi, was published yesterday.

QUESTION: How do you assess the post-Reykjavik scenario in the U.S. and Western Europe? Do you see any changes in the position of West European countries away from stated goals of arms control?

ANSWER: It was a moment of truth, it demanded truth from all. It has shown everyone's real intentions. All people tended to speak of the horrors of nuclear war but when suddenly we opened the door and people could see it was possible to achieve a non-nuclear world then a lot of them shied away under different pretexts. I don't blame them really, they just have to think it over to understand it deeper. Some for instance fear that conventional war will then play a greater role and this will make war more possible because everyone is afraid of the consequences of a nuclear war and they don't have such a fear of a conventional war. Then, the USSR has a clear conventional weapons superiority. But I will add here that George Shultz (the U.S. Secretary of State) and then Donald Regan (the White House Chief of Staff) have actually conceded lately that conventional superiority is not such a problem and that NATO can face the USSR. And for the first time they stated the truth. The second point is that Gorbachev's proposal (for the complete elimination of nuclear weapons by the year 2000) was not just a matter of doing away with nuclear weapons only and to allow the arms race to continue in some new sphere, but a very big step towards a new concept of security in which military force will play a much smaller role and then will diminish and be eliminated completely.

Nuclear weapons just impersonate all the evils of modern technology. We have the First World War, which scared the hell out of the world. You may recollect the 'lost generation' and the 'war to end all wars' etc. and that was a modest war by present standards. Then you have the Second World War, and we know better than anyone else what it means. You know that any war now will be much worse and the Europeans will be just as scared of a conventional war and I think the world in general ought to be as well. You now have non-nuclear explosives which in some cases are not distinguishable from the nuclear ones. Then you have the environmental issues, you know Europe has 150 nuclear reactors, there is so much petroleum, gasoline products stored there as well as, a lot of chemical factories etc., you could ruin the environment.

We don't want to merely replace the nuclear danger with some other danger—chemical or biological or something new—that may be invented like meteorological warfare or geological warfare or something like that. Gorbachev's proposals were really the kind of great steps required to do something about this militarised world, steps that are vitally needed for the well-being of everyone. Therefore we proposed this summer in Budapest deep cuts in conventional forces as well. This was a formal proposal of the Warsaw Pact countries and we have not yet received any response from the NATO countries.

Q: General Secretary Gorbachev has been stressing that the vital tasks before the USSR are of reconstructing and restructuring its economy. There is also a stress as evidenced in the Vladivostok speech about a recognition of the plurality of Asian societies. Does this mean that the USSR will turn inwards or that there will be a deemphasis in its commitments to the national liberation movements and the support to the lesser developed countries of the world?

A: I do not think that the USSR will become isolationist. The set of priorities worked out by our leadership, will not make us passive but call for a very active foreign policy which will enable us to create an international environment and make it possible for our country as well as other countries to concentrate most of their resources and attention on their internal affairs and building up their economy, improving their educational systems and developing their democratic system and even moral development of the country. So this calls for a more active policy.

Adverse trends

Unless we fight the adverse trends in the world these days, we will get into big trouble.I think we are living in a situation in which we don't need to do anything special to get into big trouble. Its enough not to do anything. The trends that are working will bring you to this precipice on their own.Therefore you can see that it requires great activity to change these trends, it is a fact of survival.

The second part, of your question with regard to acceptance of plurality of Asian societies and nations, well, it has already been part of our policy, for some time now, the idea of peaceful coexistence was put forward 30 years ago.

I think one has to understand that the liberation movements that we talked of in the 1950s or 60s were something different—a phase of the decolonisation process. Now you have this problem in much smaller parts of world such as South Africa, it is not a global problem. It doesn't mean that all the problems are settled or that there is no neocolonialism. There are a lot of other problems and the situation doesn't look so hopeless as at this time. So the way we look at is that we are natural allies of developing countries, we have no differences of interest. We are for their development. We don't see any different goals and we feel we have moral commitments to them.

Q: Will the USSR be patient after January 1987 when its unilateral moratorium on nuclear testing runs out?

A: I hope we can cling to it as long as we can until it doesn't endanger our security. I am not in a position to state as to when this situation will be reached. I hope it has not been reached. But it will not be an easy decision. I think Gorbachev looks at it in the same way. Unless the resumption of nuclear tests are absolutely necessary to ensure security, he will not be eager to start them. How it will be I can't say. There are two sets of people not very happy with the moratorium, one set is those who have plans for peaceful nuclear explosions and the other set is people involved with some of the military programmes. It is not very easy for us to see the U.S. modernising its arsenals while for the past one-and-a -half years we have not done any testing

A global issue

Q: Do you have any special observations on Indo-USSR ties?

A: I have to remind you I'm not a specialist on India. But for me Indo-USSR relations are a global issue. Here Indian foreign policy plays a major role, a political one and even a moral one. And in this sense I think our relations are very important not only to both of us but they also generate a lot of hopes in the international community as well because I don't think that even very bad or suspicious people can suspect something bad will result from good Indo-USSR ties.

Q: We have seen for the last six years a very conservative and right-wing foreign policy establishment running things in the U.S. However the economy still seems to be in trouble and the Reagan 'revolution' is not quite in place. How does the USSR view the future in the U.S.?

A: I would be the last to underestimate the U.S.' economic, military and political capability. At the same time I cannot imagine how the Americans can afford to pursue the policies they have pursued for the last six years for another six years, even from an economic point of view, I cannot understand. It is almost a miracle how the Reagan Administration has managed to go on for so long, it is a tribute to the Teflon capability of Reagan and his personal popularity with the people and of course sheer luck! At the proper moment the oil prices dropped and a lot of other things happened. But you can't continue to depend on luck, you run out of it and I have a feeling that they are entering a period of disarray, and difficulties. This doesn't make me too happy because I don't know what will be the consequences of it. You never know with such countries.

Period of decline

Politically, without doubt, the President has entered into a period of decline for natural reasons. In two years he will be out. For example if you tell some one that you will die in two years on this particular date, you can imagine what will happen. This is the time when some people desert the boss, and opponents become bolder and you know of course that the American press was unusually timid and kind to him. I think this will change as well. So I think the watershed was the midterm election earlier this month. My understanding of American internal policy is that this was the last time the President was needed by many people. He, won't be needed any more; he tried to help them and this did not really work. But then this coincided with Iran and other troubles. And in the economy also you can see that you cannot just overspend without bothering about the consequences.

Of course you don't expect a collapse of the U.S., or it becoming a great liberal country or something. I don't know what will happen. I think they have also reached the limits

of their dominance in technology. People around the world have a great respect for American technology and I think they deserve great respect on this score; but I think they have sometimes undue admiration for America as a technological power and just now we see deterioration even in this area. A recent Congressional study indicates that the U.S. trade of high-tech goods has shifted from an active balance to a passive balance. They had an active balance of $27 billions in 1980, it was $4 billions last year. It will be minus $2 billions this year and this is high-tech alone.

Q: There is some talk that the SDI is somehow linked to the U.S. desire to retain its edge in high-tech industries. What is your view?

A: More than pumping in money it is also linked to pumping away brains from the rest of the world to the U.S. I have talked to many Americans, they are very concerned. In many key industries like computers, optics, lasers, new materials, they buy off all talent from all the countries in the world. These people don't even join companies like the IBM, companies which played such a tremendous role in technological development. Now they go to this futile project from which you cannot get any spinoffs because they are such exotic fields; so there can hardly be anything for civilian economy. They have 100 full time people to recruit people in the U.K. Even the U.S. universities are in trouble because the best people are leaving them. They do the same with Japan and with India. It is a thing for which all will have to pay a price and it is unforgivable stupidity.

The trap

Q: Do you see a situation where the U.S. will push West Germany and Japan to militarise further? They have been pushing them for the last five years. Nakasone (the Japanese Prime Minister) for one is interested in bypassing the constitutional limits placed on this in his country with regard to nuclear weapons etc. This could be one way of reducing their own expenditure.

A: I don't rule out a shift. But I don't think they (the Japanese and the West Germans), will fall into this trap. I have spoken to many Japanese and I hear different things. Some of them think that the SDI is as much against the USSR as against Japanese trade and export industries. One has to understand what is meant under SDI, of course there will be some research in super-computers, optics, lasers and other fields but I don't think that the idea of 'astrodome defence' will survive for many years after President Reagan. And while we are against it as Gorbachev has explained it, even if it is in connection with offensive weapons it becomes an obstacle to any cuts in nuclear weapons. And second, if you concentrate so much money on research facilities and military technology, you would have a tremendous new round of the arms race in all fields, nuclear and conventional and offensive and defensive and on the land and on sea. Therefore we fight against it and India also supports this position.

Q: Do you detect any likely contenders in the next American election?

A: I have been in this business for almost 20 years, I have found out that it is impossible to guess anything like this two years before the next election. I almost always make a mistake. In 1968 I couldn't guess about Nixon, or later Carter and even Reagan could not be seen on the horizon in 1978. I am very glad that the people to whom I report have become quite sophisticated and they never ask me this question!

Q: Do you think that the Reagan agenda is very much in place even today and the rightward shift in American politics as such will be around for some time?

A: Yes there was such a shift. You see the Democrats too have learnt their lessons in the last election i.e. 1984, they tried to oust Reagan and they performed poorly! But I don't know what their platform will be in 1988. The mid-term election earlier this month was fought on local and personality issues despite Reagan's attempts. I don't think that the rightward shift can be viewed as a constant factor in the coming years. You know many of the steps taken by the Reagan Administration would have been done by any incoming Administration at that point in time. There was a lot of unnecessary bureaucracy, cumbersome procedures. I think this was on the cards. Tax reform requirements and so on. It will turn out that this reform is not ideal some time later.

/9317
CSO: 1812/143

SPACE EXPERT SAGDEYEV INTERVIEWED IN INDIA

Soviet Alternative to SDI

Madras THE HINDU in English 1 Dec 86 p 8

[Text]

Academician Professor Roald Z.Sagdeev,a world acknowledged expert in space research, is the Director of the Space Research Institute of the USSR Academy of Sciences and the Chairman of the Soviet space agency Intercosmos. He came with the delegation accompanying, the Soviet leader, Mr. Mikhail Gorbachev, who made a State-visit to India. Prof. Sagdeev has been very much in the news in recent days after the extremely successful Soviet space missions VEGA I and VEGA II, which were launched in December 84—closely following each other—to first have a Venus fly-by in June '85 and an encounter with the Halley's Comet in March '86.

A strong advocate of International cooperation in space research, Prof. Sagdeev demonstrated the benefits of such an approach by leading and co-ordinating the encounters of the Soviet, the European Space Agency, the Japanese and the U.S. Halley probes, the results of which are flowing in now. In an exclusive interview to Our Science Correspondent Dr. R. Ramachandran in New Delhi, Prof. Sagdeev talked about a wide range of issues, from the Halley and Venus to strategic issues of the ABM Treaty and the U.S. Strategic Defence Initiative.

The following is the first part of the interview:

QUESTION: Prof. Sagdeev, you were expected at the symposium of the International Astronomical Union (IAU) which was held last year in New Delhi, but you could not make it. Is this your first visit to India?

Answer: No, the second. The Geneva summit coincided with the IAU symposium and I was summoned to the talks between the Soviet Union and the U.S.

Q: As the man in charge of the Intercosmos Space Agency can you say something about the international cooperation in space research you envisage and, in particular the 'Star Peace' plan the Soviet Union proposed at the U.N. In what direction do you foresee these ideas taking shape?

A: First of all, we were thinking of 'Star Peace' as an alternative to the weaponisation of outer space, which is very dangerous by itself, in which even with a fraction of the resources suggested by the present U.S. Administration for the SDI programme the world community can put space to much better use. So essentially what was suggested by our Prime Minister, Comrade Nikolai Ryzkov, is to set up a kind of an international think tank to assess what kind of problem different countries, specially developing countries, face; what could be done with the use of space technology and, moving step by step, may be in one decade from now towards the end of the century, create a Worldwide Space Organisation—WSO-which could perform any kind of activity. Our proposal at the General Assembly of the U.N. was a suggestion for the international community to discuss and it did not try to predefine its structure and mode of operation.

Q: What is the kind of cooperation that, in your opinion, can come about?

A: I think cooperation of several types is possible. Developed countries can share space technologies which they have. For example, our country has great experience in booster technology. Similarly, other countries can share their expertise, for example, the Americans in remote sensing techniques. And then we could have an international network jointly operated for remote sensing and educational purposes. There is also a proposal for 'Star Health' to create a worldwide medical service via special satellites. So in many different areas we could cooperate internationally.

Q: In the light of increasing commercialisation of space technology in the West do you think the international cooperation in space of the kind you envisage is a realistic idea? Particularly in remote sensing where there has been a resistance to the Soviet efforts at the U.N. to bring about a limit on the resolution of civilian satellites?

A: This, of course, is a sensitive problem. There are different options. One group of people think that since already the Americans and more recently the French introduced very high resolution (in remote sensed data)—in the French SPOT, we have 20 metres and 10 metres resolution—we should *de facto* somehow acknowledge the existence of such resolutions. There are other different approaches to the problem. This is exactly what needs to be discussed and decided within the international community and that was the objective of our proposal.

Q: How serious do you think is the problem of space and frequency allocation for geosynchronous satellites, an issue which has been brought up, repeatedly at the WARC meetings?

A: Allocation of room and frequency might become a serious problem in the future and this only stresses the necessity for international cooperation in space technology

Q: There appears to be a growing opinion in the U.S. that the U.S.-Soviet cooperation should be strengthened. Do you think that this cooperation is likely to be revived and, may be, lead to the much-talked about joint manned mission to Mars? Or given the present political climate this might not happen?

A: You know we had an agreement on space cooperation signed in 1972 during one of the summit meetings. Within this agreement the Apollo-Soyuz project was carried out in 1975 and 1982, when the terms of the agreement expired, the U.S. Administration did not want to continue the cooperation. Apparently now the situation has changed. There is an understanding that it would be profitable for both sides to restore cooperation and we have had several meetings at the working level. A draft treaty is ready and is waiting for a better political climate specially taking into account the American inconsistent stand at Reykjavik.

Q: There have been press reports from the U.S. that the Soviet Union is building a space shuttle.Can you comment on that?

A: No comments.

Q: But has the Soviet Union conducted any tests for the shuttle option?

A: What I can tell you is that we are considering both ways of space transportation—expendibles and reusables—and then the future would show what is the safest and most economical. At present we have doubts about the shuttle—it is too risky after the Challenger.

Q: You've said (at a recent press conference) that if the Reagan Administration pushes ahead with the SDI programme,the Soviet Union will be forced to respond in some fashion and it will not be the same as Star Wars itself in approach and concept. Can you elaborate on this and give an idea of what the thinking is?

A: There are a lot of counter measures suggested and discussed in scientific and strategic literature. There are essentially two groups of counter measures. One, the passive group,which does not try to attack the Star Wars system but tries to make offensive arms to be able to resist the SDI attack and to be able to penetrate or circumvent the defences.

As one such counter measure I could mention the strengthening of the walls of the fuel tanks (of the missile launching system). Similarly, the walls of the booster can be made a few times more resistive. There is still a lot of potential (in this direction) because no one has tried to do this (before). It would push the power requirements of the laser beam to such an extent that it would be extremely difficult to make and very expensive. You can also increase the power of the booster so that the active part of the trajectory—the launch part—will be significantly shorter and thereby lessen the chances for the Star Wars weapons to hit the boosters.

There are also other ways—the active measures. Active measures are based on the extreme vulnerability of the space based SDI systems. I do not exclude some tense situation when one of the sides—if not both—would be pushed to such a position that the 'SDI system' of the other is attacked. This is of course very dangerous and very risky and this is why we are trying to persuade the Americans to stop thinking in that direction.

Q: Linked to the Star Wars is the ABM Treaty.With the development of ASAT weapons and Anti-Tactical Ballistic Missiles (ATBM) it would appear that you would need a treaty broader than the earlier one to cover these as well.What is your opinion?

A: You know the earlier ABM Treaty included strategic missiles only. But then it was negotiated clearly enough to take into account the potential new technological developments, exotic technologies. These are essentially covered by the old treaty.ATBM is, of course, a grey area which falls between potential air defence and the traditional strategic missiles. This is,of course,an important issue .But I think while dicussing this issue we should. not reject the old ABM Treaty. It is very good. It protected us during the last 10 years from the explosive arms race and,therefore, we should keep it and then the above issues should be discussed.

Global Cooperation in Space

Madras THE HINDU in English 2 Dec 86 p 8

[Text]

Prof. Roald Sagdeev, Director, Space Research Institute of the USSR Academy of Sciences, deals with various aspects of space sciences in this second part of the exclusive interview by Our Science Correspondent, Dr. R. Ramachandran in New Delhi. The first part was published yesterday.

Q: Do you think there is scope for appropriate modification of the fremework of the ABM Treaty?

A: In principle it would be possible in a better political climate but not now. Now, as you know, the present U.S. Administration does not agree even on the old interpretation of the ABM Treaty.

Q: There are other issues which come up when one discusses space technologies at international levels. The U.S. is now developing the Transatmospheric vehicle called the Space Plane. With such developments terms such as 'outer space', 'inner space' etc. seem to lose their meaning and the distinction becomes thin. What are your comments?

A: Earlier discussions on this issue did not result in final definition for the border altitude. I think now it is becoming not so essential.Independent of what the beginning of outer space is—150 km.or 100 km. altitude—now the relevant issue is that of weaponisation of space. I think the main discussion has shifted to that area now.

Q: Can you comment on the U.S. allegation that the Soviet Phased Array Radar in Abalakova near Krasnoyarsk is violating the SALT I Treaty?

A: You know we have given an explanation to America that it is not for ABM, not for Early Warning—EW systems are allowed only on the periphery—but for satellite tracking. It is very convenient to use the Phased Array systems for satellite tracking because these allow you to watch simultaneously many flying objects and with the present traffic in orbits you would imagine that it is reasonable. In my view, it is one of the spin-offs from military development.But the Americans believe that it is not so and say that even if it is so in any situation with a change in software this satellite traffic control will be converted to ABM type of radar.

But in the context of our discussion on the SDI we would be ready to go to very far-reaching on-site inspection and,I think, with such an approach there would be no difficulty to prove that we are really doing permissible things but the Americans don't want to go for such an agreement(after their SDI programme). And at the same time they have an EW Phased Array Radar at Thule in Greenland and Flyingdale in the U.K. So it is a matter of concern for us.

Q: Talking of on-site verification,I would like to ask you what was the outcome of the recent agreement on seismic monitoring of nuclear tests in the two countries? The U.S. scientists came to the Soviet site at Semipalantinsk and tested the instruments whereas the corresponding tests on the Nevada test site did not materialise. What was the reason?

A: What essentially was the purpose of these tests was to be able to study the features of the geological beds of these areas. And the seismologists believe that if such information would be available they could detect even very low yields of nuclear explosions.At present they think that information is enough to detect at least one KT explosion from large distances by using national or international means of verification.But with the on-site inspection like the

one we conducted just now ,we would be able to decrease the threshold for detection enormously--just fantastic.At present,I think,with these American instruments at Semipalantinsk we would be able to detect explosions above a few hundred kg yield which shows that verification is not anymore a problem.

Essentially the Semipalantinsk-Nevada project was at a non-Governmental level. From our side it was the Academy of Sciences and from the American side it was the National Resource Defence Council(NRDC) and apparently they encountered some problems with the present U.S. Administration because of some restrictions on the activities that could be carried out at Nevada.I don't know what was the final outcome.

Q: What have been the experiences of the Soviet Union's attempts at exploring oil and gas sites with seismic tests using Peaceful Nuclear Explosions(PNEs)?

A: I am not competent to comment on the findings but you know at present we have stopped even the PNEs.

Q: Why I asked was because there is this dichotomy that on the one hand there is the possibility of peaceful uses of nuclear explosions,as the Soviet Union has demonstrated,and then there is this question of nuclear weapons and disarmament.How does one resolve this conflict?

A: The situation at present is quite simple.Right now in order to facilitate an approach to a comprehensive test ban we stopped even the PNEs.And if the Americans would be ready to sit down and discuss we could decide about the PNEs as well.But if we would be able to reach a comprehensive test ban,I personally think that,the price of refusing even the PNEs would still be acceptable.

Q: What I meant was not only for the Soviet Union and the U.S. but,in general,for any country whether it should take up a programme on PNEs or not.This is the dilemma.

A: It is an interesting point.Certainly it gives new and interesting options but I think,the benefit from a comprehensive test ban would be much greater than benefits from the PNEs.

Q: Professor Sagdeev, in the area of basic research the Halley's comet encounter mission was a success story of a major international collaborative effort in which the Soviet spacecrafts VEGA I and VEGA II played a key role. What are your impressions?

A: I must say that international cooperation within the Halley campaign was outstanding and exciting. Long before—for about five years—prior to the encounter we had an idea of the mission. Representatives of several space agencies, which were planning to send probes, exchanged ideas and we started special coordination groups which met annually. So we knew the designs of each other's spacecrafts and instruments. We also exchanged the various models of the comets which was very essential. In some cases we were even able to perform intercalibration of different instruments.

But it was just a few days prior to the encounter that the combination of efforts became evident when we performed the so-called pathfinder operation. Since VEGA spacecrafts approached the comet a few days prior to the European Space Agency's Giotto we had a very good chance to measure the position of the comet with much greater precision than it was known on the basis of astronomical data. For example, astronomy predicted the orbit of the comet with an accuracy of a little bit less than a 1,000 km. After the VEGA encounter we could predict the orbit for Giotto encounter with an accuracy of about 20-30 km. We then had a digital link from Moscow to Darmstadt in FRG but we recognised in time that accurate measurement of the orbit of the comet would be in the frame of reference of Giotto relative to VEGA and to correct this we would need the accurate position of VEGA—not necessary for us but essential for Giotto. And this was done with the help of NASA. We generated special coherent signals from VEGA spacecraft to be picked by NASA's Deep Space Network stations and they finally made very accurate position measurements of VEGA. So this type of multilateral cooperation enabled the Europeans to undertake the last manoeuvre. Just 24 hours before the Giotto encounter they switched on the engine of Giotto and then the spacecraft could move very close to the nucleus of Halley.

Q: What were the main objectives of the VEGA mission?

A: The idea was to come very close to the comet's nucleus. The heart of the comet stores all the material which eventually evaporates to vast spaces but the nucleus had never been seen because it is very small. The resolution of the telescopes is not sufficient to see it.In addition it is covered by bright coma, the comet's atmosphere, as the dust particles and gases escaping from the nucleus scatter light and obscure the nucleus.It was perfectly clear that in order to see the nucleus it is necessary to approach it at least at a distance of 10,000 to 20,000 km. So we targeted our VEGA spacecrafts to approximately 10,000 km. Eventually we had the closest approach of 9,000 for VEGA I and 8,000 for VEGA II and it was already possible to see the nucleus.

Q: What significant features of the comet were seen?

A: The size of the nucleus was two or three times larger than we had expected.It had a rather elliptical shaped body with the large axis equal to 16-km and small axis equal to eight km. The temperature of the surface layer (100 degrees C) appears to be much larger than we had expected(minus 100 degrees C). Then it is very dark and ice and snow are not seen on the surface. Evaporation takes place from the inner

layers and probably the vapours and gases escape through a multiplicity of micropores.

Substantial fraction of the material escapes in the form of 'dust jets' but still there is no comprehensive explanation for this phenomenon. There are some 'active regions' which evaporate material at a much faster rate. Then at such a fly-by you can cross these jets and among the instruments we had there were dust detectors which were collecting some of these particles, measuring the masses of individual particles and even analysing them chemically. Right now we already know the chemical composition of approximately a few thousand particles.

Q: Any important findings of these dust particle analyses?

A: It seems that the material of the comet is from the inter-stellar medium. Some fractions of the material represented in these dusts are certainly not born with the solar system. A lot of organic material has been found. There is clearly water, formaldehyde and many carbonaceous molecules. There are also mineral cores which act as centres of condensation for larger dust particles. At a distance of a few thousands of km and further from the nucleus, some fractions of neutral gases escaping from the nucleus are ionised by solar radiation and plasma processes are very well pronounced in the comet's environment. This cometary plasma collides with the plasma from the sun, the solar wind, and the most interesting feature of this interaction is the formation of a shock wave due to the supersonic motion of the solar wind plasma. We now have a lot of data on shock waves due to the two VEGA crossings, the Giotto crossing and the Japanese probe Suisei crossing (of the shock front itself) and these are being studied now.

Q: How about the encounter of the U.S. International Cometary Explorer (ICE) with the comet Giacobini-Zinner (GZ) just prior to the Halley event?

A: Essentially ICE was the first to cross the cometary plasma region but GZ was a rather inactive comet and it did not produce the phenomena which our American colleagues perceived as a shock and they called it a 'bow wave'. Halley's comet, which is much more active, produced a real shock wave.

Q: You are probably aware of the theory being upheld by Fred Hoyle and Chandra Wickramasinghe that life in its primordial biological form originated in cometary dusts and they believe that the Halley comet has substantiated this with further evidence. What is your opinion?

A: It is very difficult to say because for the kind of infra-red radiation detected both by the VEGA spacecrafts and by Wickramasinghe (using ground based telescopes) it is not necessary to have complex biological molecules. Even very simple organic molecules, very far from life, can excite this spectral band. So, I think, the relation of comets and origin of life is highly speculative.

Perfecting Manned Orbital Stations

Madras THE HINDU in English 3 Dec 86 p 8

[Text]

Prof. Roald Sagdeev, Director, Space Research Institute of the USSR Academy of Sciences deals with space travel, orbital stations and the flights to Venus in this third and concluding part of his interview by our Science Correspondent, Dr. R. Ramachandran in New Delhi. The first two parts appeared on Monday and Tuesday.

Q: Can you also tell something about the Venus experiment of VEGA I and II in terms of their findings?

A: The Venus part consisted of two different parts. One was to continue the lander approach. VEGA had two landers but since we landed on the night side it was too dark to get any images. But we tried to carry out cosmochemical experiments to see the composition of the Venus particles. So chemical analyses on the new landing sites have been done just to see what the composition of the soil at these sites is like. But I think the most important aspect of this project was to follow Venus's atmospheric circulation.

The atmosphere of Venus is kind of unique. There is a giant single cyclone which rotates the whole atmosphere with very high speed—one revolution in four days. But the conclusion of this kind of superrotation was indirect. Two small weather balloons were injected in the centre of the atmosphere in the equatorial region at an altitude of about 50-km and we had the balloons follow the atmospheric currents, not only the general pattern but also to show how turbulence, convection, small excursions etc.are taking place. Each balloon traversed about 10,000km and we have a lot of data. Now these data are under interpretation—again we had a very interesting joint team which included a French group and the Jet Propulsion Laboratory of the U.S.

Q: You also had an interesting Very Long Baseline Interferometry (VLBI) set-up to track the balloons ...

A: You know the best way to follow the trajectory of the balloon was to use the

RI technique. So the signal from the balloon was detected by several radio-telescopes on ground. At the peak (of the project) I think we almost had 20 telescopes. We had a few telescopes in Europe, in South America. The accuracy with which we were able to reconstruct the trajectory of the balloon was a few kilometres.

Q: How well do we know the magnetic field of Venus to be able to do this?

A: You know Venus is a non-magnetic planet—probably unique among the planets. Even Mercury and Mars have magnetic fields, not very strong but measurable, but Venus probably is non-magnetic like our moon.

Q: Any reason you can ascribe to this property of Venus..

A: The simplest consideration that since Venus as a solid body does not rotate—more precisely it is extremely slow with a period of rotation of something like 250 days—gives some insight as to why there is no magnetic field. Usually magnetic field (in planetary bodies) is generated by two types of motion occurring simultaneously—the internal convection in the liquid interior (the magma) and the rotation. At least we know that there is no rotation.

Q: Now that apart from the VEGA studies, the American Voyager projects have given us data about Jupiter and Uranus, and we have the earlier data on Mars and the moon, do we have sufficient understanding of the formation of the solar system?

A: I think the general concept has not changed. There was a supernova explosion and then the envelope of the supernova escaped. Some fraction of it was captured and formed the nebula. This nebula after some cooling started to collapse into a disc and then the next stage of the collapse was the decay of the disc into certain smaller bodies. But this, you know, is only a framework for a future theory. I think it will be very important now to use information of all these experiments as a basis for computer simulation—computers are coming into this field in a big way—and in the next few years there should be more or less a comprehensive theory.

Q: Isn't there a scenario that the formation of the planets was preceded by the formation of rings which contracted into planets?

A: Yes, this is an intermediate step—How the disc transformed into compact spheroids, the planets. The most sensible theory is that first you will have collisions of the disc to form rings and then the rings could be collected to create planets. But, you know, it is only a handwaving type of a theory. The real complete theory will be in the future.

Q: The Soviet Union is believed to have drawn up a big plan for the exploration of the solar system in the Nineties—there are reports of the Mars project, the Vesta asteroid project, the Lunar probe project etc. Can you tell us some details of these projects?

A: Right now our next goal is to launch two spacecraft to orbit Mars—the so called Phobos (one of the moons of Mars) project. For a few months these spacecraft will work as Mars orbiters providing remote sensing data of Mars and its atmosphere. But the main objective of the mission is to have a very close rendezvous with Mars's moons—specially with Phobos. After certain maneouvres the spacecraft would approach very close and move very slowly such that the relative velocity would be of the order of a few metres/second. And we plan to go over the surface of Phobos at an altitude of about 50 metres.so that high resolution photographs for subsequent geological analyses can be taken. Not only that, you can also do cosmochemistry. And we are trying to develop new methods for chemical experiments.

If you are in the vicinity of a celestial body which has no atmosphere you have a reasonably good vacuum. Then you can use remote probing techniques and we have developed two such techniques. One is to fire very small modest lasers from the spacecraft onto the surface. When the laser beam would hit the surface it would scratch small amounts of material from the surface and evaporate it. Some fraction of this material would be ionised (atoms stripped of their outer electrons) and we will try to pick some of the ions. Every time you fire the laser you will gather information about the chemical composition of the surface. So it is —if you compare with the Viking type of lander experiment—a kind of mapping of the surface. You can pick up information from any desired point. In fact, when I was leaving Moscow we just concluded an important step in the tests of these lasers. They are, as I said, very modest lasers if you compare with the Star Wars lasers—the energy unit of these lasers is a million times smaller.

The second is to use an ion beam essentially to excite secondary massive ions from the material of the surface. When there is no atmosphere you can do this from a distance. A few milliamperes of ion current is sufficient to produce secondary ionisation. Of course, unlike the laser beam you cannot focus an ion beam sharply. So it will be a wide beam. Spatial interpretation of the surface using this will complement the laser derived information. In addition we will use traditional techniques like the Viking. Two small landers will descend and each will collect X-ray fluorescent spectroscopic data as well.

Q: Now that the permanent manned orbiting space complex, MIR, is operational can you tell us how it is different from the present Salyut space station in terms of the essential technologies involved and what are the plans for MIR?

A: Essentially MIR is using the same booster as the Salyut station and so it has the same weight lifting capabilities but, since we

changed the components, we have a kind of weight saving with MIR now. This affords much better chances for scientific instruments as payloads.

At present we have an initial configuration on orbit and this will be upgraded during the next year over several launches. With some of the launches we will dock additional modules to the present configuration. We are really very busy at present in preparing different such modules full of astronomical instruments like X-ray telescopes to study quasars, neutron stars, pulsars and may be black holes in the X-ray region. So I think this modular approach of gradually upgrading the MIR station to change its scientific framework to suit the problems under study will go on several years now.

Q: What is its present level of operation?

A: After putting MIR into orbit it was first checked by a few cosmonauts and some experiments have also been performed. But we would like to bring many more scientific instruments on board MIR.

Q: Talking of space experiments the Soviet Union had carried out several biology and material science experiments on board the various Salyut missions including the Indo-Soviet manned flight. Any significant results of these?

A: I think the study of the behaviour of the human body in space--the space medicine aspect--certainly benefited a lot from these flight experiments which have been carried out for long and doctors have learned a lot. They now know how to cure the side effects of being in conditions of weightlessness for one or, may be,two years. There were a few specialised dedicated biological satellites BIONS which carried into space many different types of species as well but I do not know the details of their findings.

In material sciences I think we are at present only at the very beginning. The giant leap forward, which was a dream of some space engineers,was unrealistic.We have to restart this with a very cautious approach--may be with a basic material science laboratory in space--and the equipment we are now sending on MIR for this purpose is much better. More sophisticated high temperature furnaces for crystal growth will now be used. So we hope that we will be able to set up a regular programme for material science in space.

Q: What are your impressions of the Indian space programme? And now that the Indian Remote Sensing Satellite will be launched from the Soviet Union how do you see the future of Indo-Soviet cooperation in space research?

A: You know, I have been following the development of the space programme in India and I think the Indians are doing it in the proper way. They are trying to be self-supporting and they are able to produce spacecraft. They have developed all the launching systems and eventually they will attain launching capabilities as well. I think we can have a very good cooperation in future,not necessarily in the old type--like launching services and equipment--but in doing something more integrated and collaborating in developing something together.

Q: Do you think that the Indian scientists could participate in the Soviet Union's planetary missions,like the Mars project, etc.?

A: I would be very happy. I understand, however,that they are currently very busy with the remote sensing project and we will try to help them in this programme. Also there are some proposals under discussion now for co-operation in material processing in space. We will endorse these types of collaborations and if there is a desire to participate in planetary missions then we will certainly try to accommodate.

THE HINDU: Thank you very much, Professor Sagdeev.

A: Thank you.

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USSR DELEGATE AT VIENNA CSCE MEETING INTERVIEWED

PM011419 Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 Mar 87 p 3

[Interview with I. Ornatskiy, member of the Soviet delegation at the Vienna CSCE meeting, by correspondent V. Dolgikh: "We Are For Cooperation"; date of interview not specified; first paragraph is SOTSIALISTICHESKAYA INDUSTRIYA introduction]

[Text] Vienna--The second stage of the Vienna meeting of representatives of the CSCE participant states is drawing to a close. Our correspondent V. Dolgikh met in Vienna with I. Ornatskiy, member of the Soviet delegation, and asked him to answer a number of questions.

[Dolgikh] Igor Aleksandrovich, at the Vienna meeting you are dealing with questions of economic, scientific, and technical cooperation. What has been done in this sphere over the past period?

[Ornatskiy] Back at the first stage at the end of last year, when the meeting participants were discussing the fulfillment of the provisions of the Helsinki Final Act and the final document of the Madrid meeting, the socialist countries submitted a number of new large-scale proposals on the main directions, including the development of cooperation in the spheres of the economy, trade, science, technology, and the environment. In the language of CSCE veterans these problem have been called the "bakset two" ever since Helsinki. In December this "basket" was added to by the proposal from Czechoslovakia, Hungary, the GDR, and Poland to hold an economic forum to discuss the most urgent problems of the development of trade and scientific and technical cooperation in Europe with the participation of not only government representatives but also businessmen, financiers, and engineers.

In February Romania proposed convening a conference on economic cooperation. The "Common Market" countries also submitted a proposal to hold a conference on economic cooperation in Europe. The advancement of those initiatives attests that the present level of East-West cooperation is plainly inadequate, and a corresponding boost is needed to impart the necessary acceleration to its development. It is significant that all three proposals provide for a discussion of promising new forms of cooperation, such as joint enterprises, for example. In this connection I will point out that the USSR, Bulgarian, Polish and CSSR delegations submitted at the Vienna meeting a separate proposal for joint enterprises and production collaboration.

The current second stage has proved very fruitful. The proposals by Romania and Yugoslavia, for example, to hold a meeting to discuss urgent problems of scientific and technical cooperation on a mutually advantageous basis, including the implementation of joint scientific research programs and the development of new technologies, are of interest. The Italian, Belgian, Greek, Spanish, Portuguese, FRG, French, and Yugoslav delegations propose holding a "scientific forum" to discuss the state of science, its development prospects, the coordination of efforts by scientists in various countries, and the implementation of joint research and projects. This proposal evidently reflects the idea of creating a "world laboratory without frontiers or secrets," as Mr Andreotti, Italian foreign minister, mentioned in his speech at the start of the Vienna meeting. That idea elicited a favorable response from the participants in the Moscow forum "For a Nuclear-Free World, For Mankind's Survival," and G. Andreotti quite recently participated in the opening ceremony at the Moscow branch of the "world laboratory."

The submission by a number of countries of a proposal on biotechnology, machine building, automation, and environmental protection appears useful. Three of them provide for the holding of a high-level meeting after Vienna to discuss the main ecological problems.

The Soviet delegation pointed out that a comprehensive approach is needed when examining problems of the environment. This was why it came out in support of holding the ecological forum proposed by Bulgaria, at which it would be possible to approve a kind of all-European action plan defining both medium-term and long-term specific tasks in the sphere of environmental protection.

[Dolgikh] In other words, a quite active discussion of "basket two" questions is proceeding in Vienna. Can it be said that Western countries have finally abandoned their attempts to use discriminatory measures in trade and economic relations with socialist countries?

[Ornatskiy] It is still a little early to say that. In the room in the Hofburg Palace where sessions are held we frequently hear correct and good words from Western representatives in favor of developing mutually advantageous East-West cooperation. However, these words are by no means always backed up by deeds. On the contrary, the prohibitory Cocom lists are continuing to swell. At the Vienna meeting we also encounter attempts to artificially limit opportunities for business contacts between socialist and Western countries. Thus, in mid-March the delegations of the EEC countries, the United States, Canada, and Norway submitted a proposal which virtually outlaws deals on a barter basis in all forms. It alleges that barter deals could adversely affect the development of economic relations in the region, and it suggests that the participant states refrain from that form of trade.

Nor can another proposal by the NATO countries be called constructive. On the pretext of widening the exchange of economic information it is aimed at ensuring the "transparency" of data on a particular country's economic situation, on the state of its balance of payments, and so forth. There are,

unfortunately, other examples of this kind. They attest that many offices in Western countries' foreign policy departments still think in old, moss-covered terms and have not abandoned the stereotypes of "economic warfare" against socialism.

[Dolgikh] How are we responding to this?

[Ornatskiy] In such cases we say that cooperation is a two-way street. Mutual advantage, trust, mutually acceptable terms, and the sides' equality in point of fact constitute the basis, the foundation of business ties. Strong-arm methods are clearly out of place here. We advocate strengthening trust and states' economic security, and not in words but in deeds. The USSR delegation, together with the GDR delegation, submitted a proposal in Vienna which speaks of removing what really hinders the development of trade and economic cooperation--which is, above all, various discriminatory and protectionist measures.

Indeed, if scientific organizations and scientists of other countries are barred from certain subregional programs of Western countries like "Eureka" which, so their participants state, pursue peaceful creative ends, then this is a real restriction on creative freedom and a fetter which is consciously clamped on scientists' creative cooperation.

The CEMA countries advocate the removal of all artificial obstacles and restrictions in the sphere of science and technology. They advocate openness of regional programs, coordination, and the joint implementation of scientific research.

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ZAGLADIN, UK'S STEEL WRITE ON HELSINKI ISSUES

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["'MN' Discussion Club" feature: "Ways Towards Trust Between East and West: Soviet and British Parliamentarians Speak Their Minds on the Issue"]

[Text] "Fill the Helsinki Baskets" by UK Liberal Party leader David Steel, MP

Like most people, I hope that one day the whole world can be declared a nuclear-free zone. But I do not believe that the realization of such an objective would necessarily usher in a new period of trust and harmony. Mutual trust must be achieved first before nuclear weapons can be abolished. And we can only achieve such a degree of trust if the current system of ideologically competing states is replaced by a unified global society with broadly mutual interests and objectives.

Clearly, such a vision will not be achieved in the foreseeable future, so politicians in both East and West must work within the current system to increase stability and trust. Ill-conceived and ill-founded unilateral policies will not increase stability and trust and may even reduce them. This criticism applies to both disarmament and rearmament and especially to Ronald Reagan's Star Wars vision.

On that cold March day in 1983 when President Reagan dropped the idea of Star Wars on the unsuspecting people of the world, including members of the U.S. Administration, he undermined the linchpin of NATO strategy--mutual deterrence, and replaced it with a new ideal--mutual survival. If this were genuinely feasible, affordable and universal, the president's enthusiasm for demolishing the whole system of world security might just be understandable. But the vast majority of scientists and academic nuclear strategists doubt that even a partial system based only around missile silos could be a feasible defence against a Soviet strike.

In my view, SDI is a program in search not only of feasibility but also of a strategy. It has succeeded in holding arms control hostage to the myth that an effective defence against ballistic missiles can be developed, and is symptomatic of a naive belief that a technical fix can be found to what is at the root of the political and diplomatic problem of stability in a nuclear-armed world.

I would like to see Britain's slavish subservience to the Reagan view replaced by the stance of an honest friendly critic. We must urge the U.S. Administration to negotiate a strengthening of the ABM treaty to make withdrawal from it liable to five years' notice. We must also press, as a matter of the utmost urgency, that a treaty to preserve outer space for civilian uses, as well as reconnaissance and early warning, be negotiated and ratified. This would prevent antisatellite systems being developed, tested and ultimately deployed, and would eliminate a major component of the Star Wars system.

For his part, Mr Gorbachev was wrong to make progress in arms control hostage to Star Wars research because nobody can verify whether research in a laboratory is for one project and not another, and I welcome his recent shift in position on this. But the Russians must show their radar station at Krasnoyarsk for what they claim it is: a system for space tracking. Without this they are merely providing the hawks in the Pentagon with another stick to beat them with.

In my view, these measures, along with ever tighter restrictions on defence spending by the Democratic-controlled U.S. Congress, will stop Star Wars becoming the most unstable development yet in the nuclear age.

But if trust is to be significantly increased, we must make progress in the Helsinki process.

The Helsinki accord was divided into four baskets. The first basket, dealing with troop movements and matters of that sort, was a good beginning and was built upon significantly in Stockholm where Eastern and Western countries negotiated to help increase stability in Europe. By September 1986, an accord had been reached, placing further limits on the size, notification, duration and observation of military exercises. Naturally, I welcome this as the Russian concessions on verification may make an agreement on the long-running MBFR (mutual and balanced force reductions) talks more likely.

But before becoming too jubilant about Stockholm, we must wait to see how well it is carried out. It isno good having an agreementfor agreement's sake. But if it is successful, we in Britain should be at the forefront in proposing how to build on this useful framework. One possibility is that troop exercises greater than a division in strength would not be allowed near the border.

I should also like to see restrictions placed on the siting of offensive weapons in these sensitive areas. For instance, bridging equipment and tactical aircraft could be moved well away from borders.

These can be no more than tentative proposals, but I believe that any moves in this direction would help reduce tensions.

The second basket of the Helsinki accords stressed cooperation in trade and technology. It is essential that this cooperation is pursued. Trade can ease tensions and at the same time break down barriers between East and West

by increasing our interdependence and by slackening the Soviet Union's economic grip on Warsaw pact countries. We in the West can also benefit from Soviet energy and raw materials.

However, it is in the third, human rights, basket that the Soviet Union has done too little to honor its obligations, and it was unfortunate that the recent six-week conference in Bern ended in recriminations between East and West after the U.S. alone rejected a neutral and non-aligned initiative on improving human contacts between people on either side of the iron curtain. While I was pleased when Anatoliy Shcharanskiy and Yuriy Orlov were released and when 200 Soviet citizens were given permission to leave for the United States, I believe we must not forget the plight of thousands of other Russian Jewish dissidents whose fight still goes on.

Trust can and must be possible in the nuclear age. But it is unlikely to come about and certain not to be maintained if both sides do not take full account of each other's concerns by developing sensible arms control measures.

"Exclusively Through Nuclear Disarmament" by USSR Supreme Soviet deputy Vadim Zagladin

Mr David Steel has devoted his article to an important and, no doubt, topical theme--trust, its relevance, and the way towards it.

I agree with Mr Steel's basic ideas. He is right, I believe, in saying, for example, that a high degree of trust can be achieved when "a unified global society with broadly mutual interests and objectives" comes into being. Evidently, we have different ideas of what this society will be like. But in principle the presentation of the question is correct.

I will also agree that today there is a need to work within the current system to increase stability and trust, and that ill-conceived and ill-founded policies "will not increase stability and trust and may even reduce them." The question, naturally, is what well-conceived and well-founded policies should be like.

Mr Steel subjects the American Strategic Defence Initiative to what I see as rational criticism. It might be worth perhaps going a little farther in this criticism--noting that the implementation of the Star Wars program would not only destabilize the situation and undermine trust even further, but also sharply increase the risk of war. This is the reason why the Soviet Union has called for the unconditional observance of the ABM Treaty, which delineates the fully obvious and accurate boundaries of what is possible and what is impossible regarding outer space.

The U.S. Administration's reckless desire to achieve a militarization of space at all costs really comes forward as a factor arresting progress on the main lines of the struggle for nuclear disarmament. It is in a desire to extricate this problem from an impasse that the Soviet Union has, through its general secretary, recently tabled a proposal to single out the problem of medium-range

missiles and to solve it separately--strickly on the principles which were agreed upon at Reykjavik. We hope that our initiative will yield a positive result. And this will provide a better atmosphere for all other disarmament talks. The logic of our actions is consistent, one should think, with the criteria of well-conceived and well-founded policies which should be observed if stability and trust are to be increased.

At this point, however, I would like to note one contradiction in Mr Steel's article. All of its provisions quoted above do not square with the contention made at the beginning, where the leader of Britain's Liberal Party writes: "Mutual trust must be achieved first before nuclear weapons can be abolished". Of course, the greater the mutual trust, the easier it will be to follow along the path of complete nuclear disarmament. But, on the other hand, would not the elimination of nuclear weapons, i.e., the total elimination of the threat of mutual destruction, be the most radical, most impressive and effective act of a well-conceived and well-founded policy on the way to stronger mutual trust? As Mikhail Gorbachev put it, nuclear disarmament would return immortality to humanity. Would not this act strengthen in a truly revolutionary way the trust among all countries of our planet? This is what we believe to be the case and that is why we are ready, as it has been officially declared from the Soviet side, to give up our nuclear status.

In Mr Steel's article there are some other details which cannot evoke support on my part. We are convinced, for example, that it is fully feasible to verify the purposes of any research in a laboratory. It's a pity that our corresponding proposals have not been supported by the other side. Another moment dealing with the radar station at Krasnoyarsk. We have explained on many occasions why we need this station. But this is exactly a case in point when no one listens to any rational explanations. Therefore we have suggested a simple variant: swapping, so to speak, Krasnoyarsk for those American radar stations in Britain and Greenland whose military-space aims and objectives are perfectly obvious and have not been denied by anyone. However, even this proposal of ours has not met with understanding on the part of our partners.

But these are trifles. Mr Steel is right in the main thing, namely, that the provision of an atmoephere of trust calls for a well-conceived and well-founded policy. From this point of view one cannot but agree with him: In whatever concerns Europe the consolidation of trust, of course, implies the further advancement of the Helsinki process. Mr Steel may have no doubts: everything will be done on the part of the Soviet Union to fully comply with the Helsinki accords, as well as the Stockholm agreements.

We are also prepared to promote economic cooperation. It has long been known that when Mercury comes into play, Mars recedes into the shadow. Trade, as Mr Steel writes, can really ease tensions between East and West.

Leaving aside Mr Steel's utterly unfounded contention about "the Soviet Union's economic grip on Warsaw Pact countries" (everyone knows that these are fully sovereign states independently determining the level, character and scope of their ties with other countries), I would like to say that the successful

development of trade relations implies their broad diversification. We in the Soviet Union by no means intend to be eternally the exporters of energy resources and raw materials. We are pinning our hopes on a greater Soviet presence on the markets of industrial products and on cooperation with other countries in the sphere of production, in the establishment of joint firms, further developing industrial cooperation.

Lastly, about the third basket, i.e., humanitarian questions. These questions, including human rights, of course, are undoubtedly important and call for firm cooperation between states--a cooperation founded on principles of mutual respect and precluding interference in internal affairs. Incidentally, the program for the establishment of the basic principles of a comprehensive international security system, approved by the 27th CPSU Congress, includes humanitarian problems as well.

I cannot agree that the Soviet Union has done too little to honor its obligations in the human rights sphere: we have done everything that has been envisaged by both our laws and the International Covenants on Human Rights. Moreover, we have done much more than other countries have.

Mr Steel very opportunely mentions the Bern Conference on human contacts between people. The conference drew up a good document and all European countries were ready to sign it, but it became impossible to do this due to the position taken by the U.S. delegation. Nevertheless, the Soviet Union has declared that it will strictly abide by the provisions of the unsigned Bern document. We are currently bringing our legislation and administrative rules into line with the principles agreed upon at Bern. These provisions serve as the basis for re-examining the cases of those who submitted applications for leaving the Soviet Union, and in the past, on the basis of the old provisions of the law, did not receive consent for this. Today there have already been quite a few instances of the above-mentioned cases receiving a positive solution in the light of the new approaches. I can tell Mr Steel that we shall continue carefully, in full conformity with legislation and without international commitments, to consider all cases belonging to the category of humanitarian questions.

"Trust can and must be possible in the nuclear age," writes Mr Steel. I want once again to agree with him on this, adding that, having been multiplied by nuclear disarmament, it will lead us to a non-nuclear age. And, lastly, I want to support his wish that, striving to achieve and strengthen trust, both sides should take full account of each other's concerns by developing what he calls sensible arms control measures. Our policy pursues precisely these objectives.

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CEMA PROGRESS IN DEVELOPING FLEXIBLE MANUFACTURING SYSTEMS

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[Article by G. Marinko, docent, candidate of philosophical sciences, and S. Ugarov, candidate of technical sciences: "The Development of Flexible Manufacturing Systems in the CEMA Countries"]

[Text] Today it is extremely important to recognize that without acceleration of scientific and technical progress and without revolutionary changes in the intensification of the economy it is impossible to accelerate the country's socioeconomic development.

In a speech at a conference at an aktiv of the Khabarovsk Party Organization M. S. Gorbachev emphasized: "Today I wish to direct your attention to scientific and technical progress, the introduction of the latest technologies and the new mechanism for management. They produce the highest economic effect in comparison to other measures. Expenditures on the introduction of new technologies are recouped, as a rule, in a maximum of a year or a year and a half. And simple expansion of production on the same technical basis using technical equipment of the same level takes 5-7 years. This is why there is a struggle on the technological front throughout the entire world."(1) The positions of the socialist community of nations in this struggle must be reinforced constantly and at high rates.

At the Economic Summit Conference of CEMA Countries (Moscow, 1984), emphasis was placed on the task of changing the economies over to the intensive path of development on the basis of acceleration of scientific and technical progress. A decisive change in the direction of problems of accelerating scientific and technical progress has now been set as the main direction for the cooperation of the CEMA countries.(2) In this connection primary significance is attached to implementing the Comprehensive Program for Scientific and Technical Progress of the CEMA Countries Up to the Year 2000, which was adopted by the 41st (Extraordinary) Meeting of the CEMA Session (1985). It earmarked the basis of the coordinated strategy in solving the main problems of the scientific and technical development of our countries and, above all, in the priority areas that determine the level of scientific and technical progress. One of these areas is comprehensive automation of production, including the creation of flexible production systems (GPS).

The task of essentially increasing labor productivity, improving product quality, reducing production outlays and raising the overall technical level today can be resolved only on the basis of computerization and robotization of production and the introduction of equipment with built-in systems of control based on microprocessors and automated control systems.(3) This makes it possible in the shortest possible amounts of time to carry out the process of restructuring technology, to optimize the loading of production capacities and to considerably reduce the capital-intensiveness of production. Calculations made by specialists show that, for example, the introduction of a flexible complex for mechanical processing of complicated body parts on machine tools of the "processing center" types makes it possible to increase labor productivity by a factor of 2-2.5, to reduce the machine tool fleet by half, to increase the output-capital ratio by 15-20 percent and to save 20-30 percent of the circulating capital. There is also an increase in the coefficient of utilization of equipment and shift work: from 0.4-0.5 to 0.85-0.9 and from 1.6 to 2.5-2.8, respectively.(4)

Flexible automation is the most promising tendency and a strategic direction in the development of productive forces. Up to the present time it has been applied mainly in mechanical processing of items by cutting. Now flexible automation is beginning to increasingly encompass automated planning, design and technological preparation of production, control of it and such processes as thermal processing, welding, assembly, painting, application of paint and lacquer coatings and other operations in various branches of machine building and the radioelectronic industry.

The need for changing the majority of industrially developed countries over to the introduction of GPS [flexible manufacturing systems] entails difficulties of further increasing the effectiveness of specialized automation. The problem here is primarily that the level of productivity of specialized automation, especially under the conditions of the production of durable goods, as a rule, considerably surpasses the demand for them. An increase in the active part of the capital leads to a gradual reduction of the norm of profitability of specialized automation. Since a high degree of updating of items is becoming a typical feature of modern production, in industrially developed countries a considerable proportion of the products are in small- or medium-series production (according to various estimates, the proportion in the metal-processing industry is from 50 to 80 percent). Finally, during the 1970's there was an essential contradiction between the considerable reduction of the time of producing products by specialized automated systems and the increase in the overall amount of time from the beginning of production to the sale of the items (from the moment the order was received until the moment of delivery). Therefore the changeover to flexible automation becomes objectively necessary--from the standpoint of effectiveness it is a qualitatively new stage in the development of automation.

Flexible manufacturing systems make it possible: to combine technological operations into a unified automatically controlled technological process; to synchronize the process of control of technological equipment and systems for supporting its functioning under automatic conditions; to carry out rapid automated readjustment (restructuring) of the technological process; to constantly optimize the parameters of the process of production; to

automatically process information; to provide for control over various stages of the process of production and auxiliary operation; to integrate with automated systems scientific research, planning, technological preparation of production and so forth; to utilize more fully system and program-mathematical methods of organization and control of production and also achievements in the area of electronic computer equipment. GPS's include: 1) a flexible automated cell (GAYa) consisting of one machine tool with numerical program control (ChPU) and an accumulator of satellite cables with blank pieces; 2) a shop with several GAYa's and here the blank pieces are delivered by hand; 3) flexible automated manufacturing (GAP). In the most general case GAP includes automated technological modules (ATM); automated transportation; automated warehouses; and systems for controlling technological equipment.5

An ATM, as a rule, includes processing equipment with numerical program control which has robotized devices for installing blank pieces and subsequently transporting them to the accumulator or to the next stage of processing. The systems for controlling the GAP have a hierarchical structure in various variants: from controlling all equipment directly by a main computer to a multilevel structure which includes several levels of control.

GPS's appear as a result of the development of two basic trends in the modern stage of the scientific and technical revolution: on the one hand, the appearance of machine tools, robots and other equipment with program control, and on the other--computer equipment and especially microprocessor equipment.

In 1980 throughout the world in industry they used approximately 125 flexible manufacturing systems. And the development of robot equipment and GAP considerably exceeded many of the previous predictions. For example, according to the prediction of the Committee for Automation (1981, United States) throughout the world by 1985 there were to have been 250 GAP's in use. But this level was reached by the end of 1983. According to another prediction the average expected number of CPS's in the world would double every 2 years during 1982-1990, but by 1987 approximately 15 percent of all the plant products will be produced with this equipment.(6)

In the CEMA countries since the beginning of the 1970's intensive work has been done for designing, creating and introducing GAP's. At the present time there are more than 120 flexible manufacturing systems and robotized complexes in operation at machine-building plants of these countries.(7)

In Bulgaria by 1984 eight GAP's had been introduced into production. The Institute of Technical Cybernetics and Robot Equipment of the Bulgarian Academy of Sciences has developed a family of standard control systems for GAP's based on microprocessor equipment. By 1990 they intend to develop and introduce 110 flexible manufacturing systems.

In Hungary by the middle of 1984 10 flexible manufacturing sections were functioning. Hungarian scientists develop a great deal of attention to systems for automated control and diagnosis in the GAP's and transportation of parts and instruments.

The GDR is doing intensive work in the area of automation of planning, preplanning modeling of GAP's, creating control systems and developing mathematical software and hardware for the GAP's. The economic effectiveness of comprehensive automation is being analyzed in detail and innovative processes are planned in the area of robot equipment and flexible automation. There are approximately 20 GAP's of various types in operation at enterprises of the GDR.

Poland has introduced six GPS's into production by now. Automated systems for controlling production are being created on the basis of microprocessor equipment and systems for automating the planning of items.

In Czechoslovakia, in keeping with the State Program for the Development of Science and Technology, in the 1970's they began planned work for creating GAP's at machine building and electrical equipment enterprises. By the middle of 1984 Czechoslovakia had introduced into production more than 27 integrated production sections (IPU). Active research is being conducted in the area of automation of planning, technological preparation of production and the creation of automated systems for controlling the equipment of GAP's. At the present time there is a tendency toward combining automated planning with automated production, that is, joining the two systems into one.

In the USSR at the present time there are more than 60 flexible manufacturing systems in operation. A large proportion of the GAP's process traditional items--body items, flat items and items like bodies of revolution. At the same time the USSR is doing intensive work for creating GAP's for polishing items, forge and press processing and applying galvanic coatings. Systems are also being developed for automation of planning and technological preparation of production, including "planning-manufacture" systems.[8] A great deal of attention is devoted to improving the quality and increasing the reliability of GAP elements. By a decision of the USSR Council of Ministers (May 1984) it is planned to manufacture and put into operation more than 30,000 flexible manufacturing modules for various technological purposes and more than 1,800 flexible manufacturing systems.(9)

This task can be carried out in two ways: through the organization of centralized industrial production and comprehensive delivery to the consumers by plant specializing in the output of machine tools with numerical control, and through the creation of GPS's through the forces of the consumers themselves. In this case one uses equipment that is series-produced by industry (machine tools with numerical program control, fittings, instruments, computers and so forth) and nonstandard equipment (transportation-accumulation, specialized instruments, specialized fittings and so forth) manufactured by the consumers themselves. In the majority of cases for the latter the second method is preferable. Therefore special requirements are placed on models of machine tools with numerical control that are being produced: the uniqueness of models for the same technological purpose, the existence of a fairly large set of cutting instruments with rapid automatic changing, low labor-intensiveness and rapid readjustment with automation of elements, convenience of service, the application of small devices with numerical program control and components of electric equipment and electric automation and so forth. Let us note that the possibility of building into

GPS's is becoming mandatory for newly created equipment with numerical program control. Sufficiently high requirements are also envisioned with respect to other elements of the GPS's manufactured centrally, for example, intertool transportation and accumulation systems (TNS).

The introduction of flexible automation raises a number of problems of a technical-technological, economic, organizational and social nature, on whose solution the effectiveness of the work for qualitative restructuring of production largely depends. A great deal of attention is devoted to certain aspects of the technological development of GPS's, particularly the module principle of their construction, technical and program support, planning and designing. The advantage of the module principle consists in that when combining flexible productions one can use standard metal-cutting tools, robots and other equipment, thus providing for their program and equipment compatibility. With this approach the configuration of the entire system can be rapidly transformed according to the changes in the needs.

The reliability of machine tools with numerical program control on the whole and the reliability of the numerical program control devices themselves are especially significant for the creation of flexible systems since the malfunctioning of any element of such a machine tool can cause the entire complex to go down. Therefore the quality of the instruments and fittings and their increased output are especially important. An instrument should meet new requirements that are determined by its utilization and flexible systems: it should have a higher degree of precision and reliability and be intended for increased speed of cutting and input and for the expansion of the number of operations performed and the list of materials that are processed. Thus success in the creation and introduction of flexible automation, among other things, depends on the restructuring of instrument production, its organization and improvement of the technical base.(10)

The contradiction between the increased effectiveness of new technical equipment and its high capital-intensiveness requires a deep scientific analysis of all factors that determine the effectiveness of means of flexible automation. Among them are improvement of the technical and structural policy, and improvement of the economic mechanism as a whole. Only then is it possible to count on obtaining maximum results from new forms of automation with minimum expenditures and in the shortest possible periods of time. Understandably, the achievement of these results is accelerated and facilitated by close cooperation among the countries of socialism.

The problem of the relationship between flexible manufacture and the so-called manufacture without humans is very important. At the present time, only in a few enterprises do the GPS's realize "technology without humans." But the considerable increase in labor productivity and the possibility of rapidly changing the list of products is achieved also in places where the GPS provides for the operation of equipment on two to three shifts.[11] Here one should note two aspects. First, while all conditions exist for the introduction of flexible manufacture, for the introduction of "technology without humans" it is necessary to solve many complicated technical, technological, economic and social problems. In the second place, the selection of the degree of automation depends on the specific features of the

given case. It is necessary to determine correctly the priority areas for improving the production base and to introduce automation in stages.

The introduction of flexible systems in Czechoslovakia is interesting in this respect. There in each of the stages particular problems are solved and prerequisites are formed for the changeover to the next stage and the solutions to more complicated problems. The first stage is integrated manufacturing sections, the second--flexible manufacturing sections and, finally, the third--manufacturing systems of higher orders (at the level of the shop and then the plant). Their peculiarity consists in the automation not only of manufacturing, but also of auxiliary subdivisions. In addition to everything else, such stage-by-stage solutions makes it possible to acquire the necessary experience and train specialists and workers.

The experience in operating existing GPS's has shown that an indispensable condition for their effectiveness is high loading of equipment on no less than two shifts a day. Therefore, depending on the series production, it would be expedient to utilize machine tools with various technological capabilities and degrees of automation, which form semi-automated and automated readjustable modules. With sufficiently large volumes of medium-series production, the system can consist of automated modules that form flexible manufacture without humans. And in the case of processing small batches of parts it is possible to use GPS's made of semi-automated machines with numerical program control with workers handling more than one machine.

The imitation modeling specialists have conducted on flexible automated systems under construction in the USSR at the present time has shown that their loading frequently cannot exceed 10-12 percent. Naturally, there are completely realistic doubts about the expediency of creating and introducing such systems. We are speaking about a particular case here. From the standpoint of the strategy of the development of production one can hardly reject flexible automated manufacturing, which as of today represents the main direction of progress of our industry and a high level of comprehensive mechanization. In a number of cases the solution can be found in the creation of flexible automated interdepartmental regional centers. Here flexible productions will operate with a maximum load.

The problem of the methods and criteria for evaluating the effectiveness of the introduction of flexible automation is especially complicated, since a final solution has not yet been found.

According to research conducted by the UN European Economic Commission, the potential capabilities of GPS's as compared to ordinary systems in the first approximation is characterized as follows: expenditures on labor force are reduced by more than 30 percent, on materials--by 13-15 percent, and material supplies and incomplete production--by more than 50 percent; the time periods for the assimilation of new products--40 percent; the number of machine tools --by a factor of 5-6; the area of production premises--by more than 50 percent; and overall production expenditures--by 14-27 percent. Moreover, the conventional net profit increases by 112-310 percent.[12]

Because of the nontraditional nature of problems of the creation, production and introduction of means of flexible automation, the socialist countries have suggested various variants of methods and criteria for evaluating effectiveness, which can be grouped as follows: 1) the determination of the additional effect from increased flexibility of production; 2) accounting for savings not only from wages of released workers, but also from public consumption funds and expenditures on housing and cultural-domestic construction that go with them; 3) calculation of the effect from reducing the shortage of labor resources.(13)

Another thing that is very important for evaluating the effectiveness and development of flexible automation is the accounting for social factors in increasing effectiveness: improvement of working conditions, ensuring of safety, strengthening of the creative nature of labor, reduction of differences between mental and physical labor, and so forth. These factors can be partially evaluated through direct economic methods since they are reflected in the growth of labor productivity in the savings on funds from reducing illness and injury, and also expenditures on the protection of labor. But a number of social consequences can be economically evaluated only indirectly: for example, comfort in production, man's increased satisfaction with his labor, reduction of moral and psychological harm related to injury, and so forth. It is necessary to develop social and technical normatives which should be economically and technically substantiated in keeping with the specific conditions for the development of the socialist society.(14)

In addition to the fact that man's participation in dangerous work processes will gradually be eliminated, direct contact of operators with machines, harmful chemical substances, and heavy physical labor will be considerably reduced, the application of GPS's does not guarantee complete elimination of injury. The control mechanisms of computers usually do not react to man's presence in the zone of the working operations of robots or machine tools. Thus there is a new kind of risk which will require the development of new norms and measures for technical safety.

Another example of the differences in social consequences from the introduction of GPS's is related to the change in working conditions. It is generally recognized that the application of GPS's leads to improvement of physical conditions. But it frequently turns out that certain designs of these systems can worsen the psychological conditions for labor. Because of its monotonous nature the work of the operators can lead to the appearance of stressful situations. Long periods of inactivity (up to 99 percent of the working time) alternating with rare brief periods of excessive loading (when there are serious problems that require an immediate solution) usually lead to psychological stress. One of the approaches to solving this problem--to be sure, not always successful--is the utilization of models which periodically imitate various disturbances in the course of the normal operation in order to train personnel.

But on the whole when considering the social significance of flexible automation one can note a tendency toward greater intellectualization of labor since the gradual transfer of executive and technological functions and functions of logical automatism to the machine contributes to "increasing the

intellectual potential of the society" (15) and expansion of the sphere of man's intellectual activity. All this raises, along with others, the problem of special training and utilization of personnel both for the creation of GPS's and for their operation. One needs specialists in the area of electronics, microprocessor and robot equipment, industrial cybernetics, systems analysis and systems equipment, and so forth.

It is necessary to have a scientifically substantiated policy in the area of training specialists for various levels. Here it is not enough to be merely a specialist in the area, for example, of industrial cybernetics. It is necessary to understand problems of comprehensive automation as a whole, the advanced art of production and management, and skills for working with a large fleet of automated equipment.

The successes achieved in the area of the development and introduction of the achievements of flexible automation have become possible to a considerable degree because of the intensive development of cooperation among the CEMA countries, the integration of their efforts and the development of international socialist division of labor. More than 20 agreements and contracts have been signed for multilateral international specialization and cooperation in the development and production both of equipment included in GPS's and its components: computer equipment, metal-processing equipment, hydraulic and pneumatic equipment, means of transportation and mechanization of loading and unloading and warehouse work, instruments and devices for automatic control, regulation and management, lubrication devices, electrical equipment, and ball bearings. There are more than 10 agreements in effect concerning scientific and technical cooperation in this area and two general agreements concerning multilateral cooperation in the area of robot and microprocessor equipment.

The joint developments of the CEMA countries are directed toward the development of systems for automated planning and control of technological process and the creation of a base for progressive unified components and new means of automation, highly effective robot equipment complexes and flexible automated productions in key branches of the national economy. Additionally, the solution to these problems is being arranged in such a way that it is comprehensive in nature and embraces all stages of scientific and technical progress: fundamental scientific research, scientific research and experimental design developments, the introduction of their results into production, the organization of series and mass output of products taking into account the broad possibilities of scientific-technical and production specialization and cooperation among the CEMA countries.(16)

In keeping with the decision of the High-Level Economic Conference of the CEMA Countries, in order to strengthen the coordination of work for solving priority problems of machine building, the Permanent CEMA Commission for Cooperation in This Area in 1984 was transformed into the CEMA Committee with this name. Within the framework of the committee development was completed on a general agreement signed at the 40th meeting of the CEMA session in Warsaw (1985) concerning multilateral cooperation in the development of GPS's for machine building and their extensive introduction into the national economy. It envisions multilateral cooperation in the following areas: 1) determination

of priority areas for development, fundamental research and the development of normative-technical documentation, 2) the creation and organization of cooperative and specialized production: (a) of flexible manufacturing modules (GPM) consisting of unified batching items; (b) industrial robots, modules, aggregates, components and batching items for them; (c) transportation-warehouse systems (including robot cars) and systems for centralized collection of wastes; (d) means of program control of GPM's, means of measurement and technical diagnosis, and meters; (e) standard control computer complexes (UVK) for GPS's with the necessary peripheral equipment and software; (f) technical means for systems for automated planning of GPS's with base and applied software; (f) electrical equipment for GPS's and GPM's; 3) the development of software for flexible production systems on the basis of unified high-level languages; 4) the creation of flexible automated productions for various technological purposes in the CEMA countries and Yugoslavia; 5) the training and retraining of personnel in the area of planning and operating GPS's.

The tasks ensuing from the program of the general agreement for GPS's have been included in the program of work of the corresponding multilateral agreements concerning scientific and technical cooperation for the period of 1986-1990. This cooperation will be carried out on the basis of multilateral and bilateral agreements and contracts concluded by the countries and organizations of the CEMA countries. The coordination of all work envisioned by the program, the observance of the course of its realization and the fulfillment of commitments ensuing from the general agreement, and also the development of proposals concerning further development of cooperation in the area of the creation, production and introduction of GPS's will be carried out within the framework of the CEMA Committee for Cooperation in the Area of Machine Building.

FOOTNOTES

1. PRAVDA, 2 August 1986, p 2.

2. See: "In the Interests of the Fraternal Countries," PRAVDA, 26 June 1985.

3. See: Chumachenko, B., "The Comprehensive Program for Scientific and Technical Progress of the CEMA Countries; the Structure of the Priority Areas," PROBLEMY TEORII I PRAKTIKI UPRAVLENIYA, No 1, 1985, pp 41-44.

4. See: "Flexible Manufacturing Systems--Scouts of the Future," EKONOMICHESKOYE SOTRUDNICHESTVO STRAN-CHLENOV SEV, No 11, 1984, p 25.

5. See: Vodachek, L., Dudnikov, Ye., Kalachev, V., and Khobotkov, Ye., "Flexible Automated Productions in World Practice," PROBLEMY TEORII I PRAKTIKI UPRAVLENIYA, No 1, 1985.

6. See: "Latest Tendencies in Flexible Manufacturing," UN Organization, New York, 1985, pp 31-34.

7. See: Grozdanova, S., "On the Cutting Edge of Scientific and Technical Progress," EKONOMICHESKOYE SOTRUDNICHESTVO STRAN-CHLENOV SEV, No 8, 1985, pp 68-70.

8. See: PROBLEMY TEORII I PRAKTIKI UPRAVLENIYA, No 1, 1985, p 38.

9. See: "On a Course to Intensification," KOMMUNIST, No 11, 1985, p 7.

10. See: Derunov, P., "Restructuring on the March," PRAVDA, 7 May 1985.

11. See: "Flexible Manufacturing Systems--The Scouts of the Future," EKONOMICHESKOYE SOTRUDNICHESTVO STRAN-CHLENOV SEV, No 11, 1984, p 23.

12. See: "Posledniye tendentsii v gibkom proizvodstve" [The Latest Tendencies in Flexible Manufacturing], p 159.

13. See: Polterovich, D., "Conditions for Effectiveness of Flexible Automation," VOPROSY EKONOMIKI, No 11, 1984.

14. See: Kulbovskaya, N., "The Socioeconomic Effectiveness of Technical Reequipment," VOPROSY EKONOMIKI, No 3, 1984, p 41.

15. Krasnov, V. and Prikhodko, V., "Flexible Systems: Problems of Introduction," KOMMUNIST, No 12, 1985, p 39.

16. See: Leontyev, V., Prokudin, V., Chumachenko, B., and Yezerov, V., "The Comprehensive Program for Scientific and Technical Progress of the CEMA Countries," PROBLEMY TEORII I PRAKTIKI UPRAVLENIYA, No 3, 1983, p 32.

11772
CSO: 1825/104

USSR VIEWS PRB, GDR, CSSR REGULATIONS ON CARGO TRANSPORT

Moscow KHOZYAYSTVO I PRAVO in Russian No 1, Jan 87 pp 62-65

[Article by VNIISZ [All-Union Scientific Research Institute of Soviet Legislation] department chief V. Zalesskiy under the rubric "International Panorama": "The Responsibility of the Shipper According to the Laws of Bulgaria, East Germany and Czechoslovakia"]

[Text] Considerable attention is devoted to the legal regulation of transport in the majority of the countries of the socialist community, and definite experience has been accumulated that is in need of study and utilization in the development of new models for the legal regulation of the mechanism of economic operations in the USSR. The Political Report of the CPSU Central Committee to the 27th Congress of the Communist Party of the Soviet Union pointed out that "a careful and respectful attitude toward each other's experience and its application in practice is an enormous reserve for the socialist world." (Footnote 1) (Materials of the 27th Congress of the Communist Party of the Soviet Union. Moscow, 1986, p 72.)

This article poses the task of giving the reader some conception of how the legislation of Bulgaria, East Germany and Czechoslovakia resolves the issue of the responsibility of transport organizations for the non-conservation of cargo and its late delivery. Along with organizational and technical measures carried out by the shipper and the cargo dispatcher and recipient (the utilization of containers with improved closures, the organization of protection for cargo being shipped, the improvement of weighing facilities, the mechanization of loading and unloading operations and the like), the development and consistent application of rules on responsibility for the non-fulfillment of obligations arising from the shipping contract are of great significance.

General Provisions

First and foremost, it should be stated that in Bulgaria, East Germany and Czechoslovakia, the shipper's responsibility for the non-conservation of freight being shipped and the violation of the established time period for delivery are defined by general standards of civil and business law along with special rules contained in standard documents regulating the relations of shippers of various types of transport with their clients. The general

foundations of contract responsibility have been established by codified documents of civil and business law. Thus, the Bulgarian Obligations and Contracts Law of 3 Nov 50, the Law on Contracts between Socialist Organizations of 23 Oct 63 and the Statute on Contracts between Socialist Organizations of 23 May 80 establish the general foundations for contract responsibility, such as the illegality of action (inaction), the presence of losses, the causal relationship between illegal actions and losses, and fault.

Paragraphs 82 and 83 of the GDR Law on Contracts in the Socialist Economic System of 25 Mar 82 also indicate the general foundations of contract responsibility in relations between socialist organizations: the parties to the contract answer for violations of their obligations and must bear all the legal consequences for the violations. Responsibility is eliminated if the breach of obligations is caused by the actions of the other party or by force majeure. Thus, the GDR Law on Contracts establishes increased responsibility of socialist organizations for the non-fulfillment of contract obligations as a general rule, refraining from the employment of responsibility for fault.

In accordance with Article 145 of the CSSR Economic Code, an organization causing another organization damages as a result of violations of contract obligations or other legal obligations should compensate for the damages.

Aside from the general foundations of contract responsibility, civil and business law also contains general provisions on the size and methods of compensation for losses caused by the non-fulfillment of contract obligations. In accordance with Article 82 of the Bulgarian Law on Obligations Contracts, the compensation paid by the violator of the contract to the other party encompasses the losses inflicted on that party and the lost profit that was caused directly and immediately by the non-fulfillment of obligations and could have been foreseen with the appearance of the obligations. Making this rule more specific, Article 16 of the Provisions on Contracts between Socialist Organizations establishes that with the non-fulfillment of contracts, including a shipping contract, socialist organizations are obligated to ensure actual execution and bear responsibility for fines, losses and lost income, which are determined with a regard for the planned profit.

According to Article 147 of the CSSR Economic Code, damages are compensated to the extent of the value of the property expended by the organization with the loss, in a monetary sum, and where this is impossible or inexpedient, by way of restoration of the prior situation.

The amount of compensation for damages is defined in more detail in Article 107 of the GDR Law on Contracts. Among the category of losses subject to compensation are included losses or property damage, expenses borne in connection with repairing the damage and lost profit, as well as fines paid to a third party. Compensation for damages is accomplished in monetary form, and a demand to restore the prior situation instead of monetary compensation is possible in cases where it can be accomplished.

The general provisions of the legislation on responsibility for the non-fulfillment of contract obligations are not limited to an exposition of the obligations of the party at fault for the compensation of the other party's

losses. It is not always possible to determine the size of these losses, and in a number of cases the non-fulfillment of contract obligations for some obligations does not cause any loss. In these cases, the responsibility of the violator of the contract obligations is reduced to the payment of fines. In Article 106 of the GDR Law on Contracts, fines are called contract penalties and are determined as an established sum of money in advance, which in the case of breach of the obligations serves as compensation for the assumed losses. The obligation of paying contract penalties is preserved, however, when the size of the loss caused is less than the size of the contract penalty or cannot be established.

The Responsibility of the Shipper

The rules on the responsibility of the shipper that have been extended to all types of transport are contained in the Civil and Economic Codes of the CSSR. These are identical mandatory norms. The shipper answers for damage caused to the cargo during the period of its acceptance for shipment to its surrender, and is free of responsibility if the damage was caused by the sender or recipient, the defective nature of the cargo, shipping containers or packaging, the special nature of the freight or circumstances that the shipper could not avert. The shipper is required to pay compensation for the value that lost or destroyed cargo had at the moment of acceptance for shipping. In the event of damage or partial loss of cargo, the shipper compensates for the lost value of the cargo or the sum total of the expenses for repairs, if it is deemed expedient to carry out repairs. For other damage, the shipper is responsible under conditions where the damage was caused by a violation of the time periods for delivery, and compensates in this case to an extent not to exceed the size of the shipping cost. Failure to observe the delivery deadlines entails responsibility of the shipper to pay the liability sanctions envisaged by the transport charters.

Railroads are responsible for damage arising in the shipment of freight in the event of its total or partial loss or damage over the time period from the acceptance of the freight for shipment to its surrender. This formula, common to the laws of Bulgaria, the GDR and the CSSR, mentions only the time frame of the responsibility of the railroads and indicates the nature of the breaches of the shipping contract--loss or damage of freight entrusted for shipment. The employment of this general rule should be combined with other norms that determine the limits of responsibility of the shipper taking into account the subjective aspect of the violation of the law. In relations between socialist organizations--the shipper on the one hand, and the freight sender and recipient on the other--responsibility ensues regardless of the fault of the shipper.

Thus, according to the rules in effect in Bulgaria, the absence of fault on the part of the shipper in relations between socialist organizations--freight senders and recipients--does not free him from responsibility, but only has an effect on the size of the loss compensation exacted. Point 3 of Article 20 of the Statute on Contracts between Socialist Organizations indicates that if the non-execution of the contract between socialist organizations is caused by circumstances that cannot be placed at the fault of the corresponding organization (including the railroad--shipper), that is, is an act of force

majeure, the compulsory directives of authorized organs and the like, then compensation is due the party not at fault. The amount of compensation is determined in the following manner: if the non-execution was caused by an act of force majeure, then the losses actually borne are compensated for; if the non-execution is caused by the directives of a functionally empowered organ, then the party at fault pays for the actual losses borne in conditions where the unfavorable economic consequences are not regulated in planning procedure; if the non-execution was caused by the directives of a higher organ of the party at fault, the compensation for losses actually borne, lost profit and fines above and beyond in accordance with the corresponding events is charged to it. The higher organ of the debtor-organization restores the sums paid at its own expense, if the unfavorable economic consequences are not eliminated by planning procedure.

The responsibility of Bulgarian trucking enterprises for preserving the freight being shipped in accordance with the General-Purpose Motor-Vehicle Transport Charter is regulated by the rules of the Stature on Contracts between Socialist Organizations cited above. It should only be noted that the trucking enterprise is responsible, with the provability of fault, for the loss or damage of freight when the driver is accompanied by a representative of the freight sender (or recipient).

In the GDR, a standardization of the rules governing the responsibility of shippers in various types of transport--rail, truck and river--is being observed. Unified rules have been established by decree of the GDR Council of Ministers on the shipment of freight by rail, river and truck transport. The Statute on Transporting Tare Freight by Railroad and Truck Transport of 1966 (with subsequent additions and changes) discusses the responsibility of rail and truck shippers in the shipment of tare freight (containers, boxed freight and the like). The responsibility of the transport organizations without fault is envisaged. Liability is excluded in the amount that the breach of obligations is caused by acts of the other party or force majeure. The Statute of 1966 gives a definition of force majeure: it is an event that could not have been foreseen and which neither of the parties could have averted with the use of means corresponding to the modern state of science and technology. This consolidation of the definition in the standard document is of great significance for all types of transport, since force majeure is a universal basis for freeing the shipper from liability for loss, shortages, damage or spoilage of freight being shipped.

Freedom from Responsibility

The transport enterprise is not responsible for freight loss or damage if it occurs as a consequence of : 1) special intrinsic features of the freight that cause its breakage, internal spoilage, rusting and the like; 2) the fault of the shipper or recipient; 3) shortcomings of shipping containers or packaging that are not noticeable from without or are noted in the transport documents of the sender; 4) actions or omissions of the shipper's escort personnel; 5) a natural decrease in the weight of the freight in shipping within the bounds of established norms. As a rule, the burden of proof that the freight losses occurred through circumstances indicated in points 1 or 2 is on the shipper. The refutation of the references of the shipper to the

circumstances designated in points 3, 4 and 5 is the duty of the transport clients.

The fault of the shipper or recipient is made specific in the rules of the individual standard documents. In the GDR, the railroad can be freed of responsibility by proving that that the freight was incorrectly loaded by the sender and this was not noticeable through outward inspection, or that the damage was caused to freight of exceptional value (for example, works of art), in relation to which the shipper did not give the necessary instructions.

A natural decrease in the weight of the freight is taken into consideration only with the observance of certain conditions.

In the CSSR, the railroad is responsible for a shortfall in weight if it exceeds the norms for natural losses. When several packages of freight are shipped on a single waybill for which the railroad established a single weight in acceptance for shipment, the allowable weight loss is determined individually for each package. In the loss of all of the freight or individual packages with an established weight, the size of the reduction in freight weight is not taken into consideration. The indication of weight and number of packages in the waybill is proof against the railroad if the railroad itself fixed it in the waybill. The railroad is assumed to be faultless in weight reduction or other freight loss for freight that was loaded using the sender's equipment and arrived at the station of destination in an undamaged railcar with unbroken seals of the sender or the dispatching station or in an open car with an undisturbed freight surface and without clear traces of loss. This same rule relates to instances of the arrival of individual packages of freight in unbroken shipping containers.

Freight Delivery Deadlines

In observing freight delivery deadlines, the shipper bears liability in the form of fines that are paid to the freight sender according to established scales. The size of the fine for overstepping the freight delivery deadline (in some standard documents the fine is called a penalty) is determined in relation to the amount of the shipping charge. On Bulgarian railroads, a sum equal to 10 percent of the shipping charge is paid for a 1/10th overstepping of the delivery deadline, and the maximum size of the fine is 60 percent of the shipping charge, sought with a 5/10 overstepping of the delivery deadline. In the CSSR, the railroad pays the freight shipper a penalty of 1/10th of the total shipping charge for every 24 hours beyond the deadline, but no more than half of the total shipping charge. In accordance with the Civil Aviation Law, the Bulgarian air shipper pays compensation to the recipient of 10 percent of the shipping charge for every day late, but no more than 50 percent of the shipping charge, for the violation of the delivery deadline, which is noted in the waybill upon the surrender of the freight for shipment. The contract, however, can stipulate a higher level of compensation paid by the shipper for the untimely delivery of freight.

The freight recipient has a vested interest in the timely receipt of freight and cannot wait forever for the shipper to fulfill his obligations arising from the shipping contract. The transport legislation therefore establishes,

so to speak, maximum time periods for waiting for freight, upon the expiration of which the freight is considered lost and the freight recipient has the right to obtain compensation for the full value of this freight. On the Bulgarian railroads, this time period has been established at 20 days, and if there is a halt to traffic due to circumstances for which the railroad is not responsible, the time period is extended, but not to more than 40 days. In the CSSR, the freight is considered lost by the railroad if in 30 days from the date of the expiration of the delivery deadline it has not been handed over or prepared for handing over to the recipient. If the shipment includes perishable items, the time period is reduced to 5 days. The air shipper in Bulgaria pays the full value of the freight if 10 days have passed since the freight should have been delivered.

With the presence of a causal connection between the delivery lateness and a reduction in the value of the freight, the damages are compensated for according to the rules established for the responsibility for the loss or damage of freight. If both a violation of the delivery deadline and the loss of freight are apparent, the shipping charge is returned for the undelivered portion of the freight along with the compensation for the value of what was lost. It should be noted in general that the obligation of the shipper to return the total shipping charge for undelivered freight exists for all types of transport.

The limitation of the shipper's responsibility for loss or damage of freight by definite value limits is stipulated in maritime, air and river transport. According to Article 177 of the Bulgarian Maritime Trade Code, compensation for lost cargo is paid at the rate of its price, but no more than 280 levs for each individual unit of freight--box, vessel, other shipping container--and for cargo shipped in bulk, it is determined by weight--per ton of cargo--or by volume--per cubic meter. In the GDR, compensation for loss or damage to cargo is limited to 2,800 marks per individual piece or customary unit of freight, or a total of 10 marks per kilogram of bulk weight of damaged or lost cargo. This limitation is not employed if the value of the cargo is designated in the bill of lading.

It is essential to take into account that a rule is in effect for all types of transport on the opportunity to declare the value of the freight handed over for shipment. The sender pays an additional fee for the declaration of value. In the event of inquiry into the size of the compensation for the loss or damage of freight with a declared value, the shipper is within his rights to prove that the actual value of the freight is less than the declared value.

While in the situations above the responsibility of the shipper is limited, there exist cases where it can be increased as well. Thus, in the GDR the railroad is obligated to pay damages within the bounds of double the amount of responsibility if the damage arose as the result of the gross negligence of transport employees. The Bulgarian Railroad Charter stipulates that the railroad pays double the value of the freight to an authorized party in the event of the use of the freight being shipped for its own needs.

Aside from responsibility for loss or damage to freight and overstepping its delivery deadlines, liability is sometimes established for other breaches of

the shipping contract. In accordance with the GDR Rule for the Shipment of Bulk Freight by Rail, the railroad is responsible up to the full amount of the shipping fee for the loss of documents designated in the waybill or for their incorrect execution; for the non-fulfillment of the allowed directives of the sender (recipient) that are capable of being executed--for example, the re-routing of freight, its turnover at intermediate stations and the like.

12821
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OFFICIAL DISCUSSES ECONOMIC COOPERATION WITH AFRICAN COUNTRIES

Moscow PRAVDA in Russian 26 Feb 87 p 4

[Article by P. Ya. Koshelev, Deputy Chairman of the USSR State Committee for Foreign Economic Relations: "A Firm Foundation for Cooperation"]

[Text] Industrial enterprises equipped according to Soviet designs, agricultural enterprises planned by Soviet specialists and educational institutions created with Soviet aid--all of this is no rarity on African soil. Our PRAVDA correspondent asked the Deputy Chairman of the USSR State Committeefor Foreign Economic Relations, P. Ya. Koshelev, to discuss the economic cooperation between the Soviet Union and the developing countries of Africa.

[Koshelev] To begin with, I will present several figures. At present the Soviet Union has intergovernmental agreements on economic and technical cooperation with 37 African countries. Let me remind you that in 1970 there were only 20 such agreements. Long-term programs of economic cooperation have been signed with Algeria, Angola, Libya, Mozambique and Ethiopia. With Soviet assistance over 330 projects have already been completed and put into operation on African soil. Approximately 300 more projects are either in progress or are subject to begin. Since 1970 the volume of cooperation with African countries has increased sixfold.

The conclusion is apparent--economic relations between the Soviet Union and African governments are growing and being strengthened.

Our principle was and remains unchanged--active support of the efforts of the continent's countries in the struggle to eliminate economic underdevelopment and assistance in national economic development with the goal of helping African countries to achieve economic independence. The USSR does not render aid with any types of political conditions attached and it does not try to acquire special advantages for itself. Soviet-African cooperation is implemented on the basis of complete and real equality of parties and of respect for sovereignty and mutual benefits.

Partners have been able to satisfy themselves that cooperation with the USSR is marked by a high level of dependability. The Soviet Union has never unilaterally broken agreements that have been made. This kind of

dependability helps African countries to more efficiently utilize their resources and creates the conditions for the implementation of long-term goals of socio-economic development.

This is facilitated by the fact that the projects that are completed with Soviet aid are concentrated primarily in the government sector and as a rule constitute its basis. Here the Soviet side takes a comprehensive approach to the development of industrial or agricultural enterprises, providing aid from the planning and building stage to the training of cadres and assistance in operations.

We plan to increase business ties with African countries in 1987-1990. Within the industrial sphere this will correspond to the strategic policies of African governments, as established by a decade of industrial development in Africa during the 1980's and the Lagosskiy plan of action. I will mention only a few projects. In Ethiopia the building of the Melka-Vakana GES [Hydroelectric Power Station] will be completed and cooperation with Zimbabwe is planned in the expansion and modernization of a number of large projects. The building of the first stage of the largest metallurgy combine in Tropical Africa will be completed in Nigeria. It is planned to carry out the modernization and expansion of Algerian and Egyptian metallurgical enterprises which were built earlier with Soviet help. It is planned to develop cooperation in the area of the mining industry with Mozambique, Ghana, Ethiopia and Morocco.

Taking into account the acute exacerbation of the food problem in African countries, the Soviet Union is focusing more and more attention on providing Africa with economic and technical assistance to develop agriculture and the branches of the agro-industrial complex. We are providing this type of assistance to 16 African countries on 155 projects, of which 60 have already been put into operation.

In contrast to the west's policy of "food aid," which often results in increased dependence on the part of the recipient, the basis of our cooperation is the long-term interests of African countries and growth in internal production. The proportion of technical assistance by the USSR in the area of agriculture is increasing to 20 percent of the total volume of Soviet technical aid to African governments. This demonstrates the complete practical support by our country of the "African Priority Program for Economic Restoration in 1986-1990," which was passed by the Organization on African Unity in 1985.

The Soviet Union will help to assimilate new lands in Algeria, Tunisia, Ethiopia, Guinea, Madagascar and other countries; it will make a contribution toward the mechanization of agriculture in these countries, toward the building of enterprises for the storage and processing of agricultural products, toward the development of sea fishing and toward training agricultural specialists.

As for the training of national cadres, about 100 various educational institutions, including 10 institutions of higher education and over 80 professional-technical institutions and centers, have been built on the

African continent with Soviet assistance. A total of over 450,000 specialists and skilled workers have been trained, including over 30,000 who have received an education in higher and middle special educational institutions of our country. At present, 22,000 African students are studying in the USSR.

We should note the economic aspect of the training of national cadres. Today African governments must hire tens of thousands of foreign specialists and skilled workers at an expense of from $20,000 to $50,000 per year per worker. Simple arithmetic will show that the training of 450,000 national specialists and workers with the assistance of the USSR will enable countries on the continent to save over $10 billion annually.

Cooperation between the Soviet Union and African countries brings mutual benefits to the partners. The principle of mutual benefits is most effectively implemented by means of the construction of enterprises on a compensatory basis, i.e. by means of the creation of enterprises which will produce items both partners are interested in. In these kinds of cases Soviet credit is repaid by means of the delivery of products or services. An example is the servicing and repair of Soviet fishing vessels. Compensatory cooperation with the USSR shows people how it is possible to attract financial and material resources from abroad on a healthy and mutually-advantageous basis without spending currency that is in short supply.

As we know, the debt of African countries to western governments and banks now nears $175 billion. The noose of this debt is choking the already-strapped economies of African countries. As a result, net outflow of financial resources out of Africa exceeds $9 billion per year. It is this amount of annual aid from foreign countries that African countries need to solve their urgent problems, as confirmed at the June 1986 13th Special Session of the UN General Assembly on the problems stemming from the critical economic situation in Africa. Socialist countries do not bear the responsibility for the crisis situation which has developed in the sphere of Africa's foreign debt. Suffice it to say that developing countries owe only 3 percent of their debt to socialist countries.

The credit policies of the Soviet Union with regard to African countries make it impossible for credit recipients to accumulate an overwhelming debt and one that does not correspond to their ability to pay. Credit is provided under conditions that are more advantageous to African states than those proposed by the West.

A significant portion of credit from the Soviet Union is repaid by means of African exports, including, as has already been stated, products from enterprises that were built with Soviet assistance.

Because of the policies of the USA and the YuAR [South African Republic] in Africa, many African countries find themselves pulled into the arms race. On the other hand, the Soviet Union is systematically and persistently following a course to curb this race and to implement as quickly as possible the principle of "disarmament for development." It is calculated that in order to improve their economies, African countries need no less than $150 billion in

the period until the year 2000. This capital can be acquired if the senseless expenditure of resources for military purposes stops.

Soviet-African relations are directed at securing peace, at eliminating colonialism in all its manifestations, at establishing equal international economic relations and at accelerating the pace for solving the continent's economic problems.

8228
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NATO ALLEGEDLY PRESSURING TURKEY ON NUCLEAR DEPLOYMENT

LD272217 Moscow in Turkish to Turkey 1400 GMT 25 Feb 87

[Report by Aleksandr Ivanov]

[Text] The latest issue of the HAFTAYA BAKIS [Sunday supplement of MILLIYET] has published a statement by Yuriy Babushkin, the naval attache of the Soviet Embassy in Turkey.

A correspondent of the periodical asked Babushkin: What is your comment regarding the claims by certain Western sources that the 25 Soviet divisions in the Transcaucasus Military Okrug constitute a danger to Turkey?

Yuriy Babushkin replied: Soviet Armed Forces, including the Armed Forces in the Transcaucasus, constitute no threat to any foreign country. All claims by Western sources to the effect that there is a threat of war from the Soviet Union are entirely without foundation. Our long-standing goal is to transform our Transcaucasus frontier into one of peace and friendship--this is our wish. Strengthening of good-neighborly relations with all our neighbors is in keeping with our vital interests."

As emphasized by Yuriy Babushkin, Soviet Armed Forces are solely for defensive goals.

Asked by the correspondent which of the NATO bases in Turkey are dangerous to the Soviet Union, Yuriy Babushkin answered: According to statements by NATO representatives, nuclear weapons are being stockpiled on Turkish territory. In addition, there are means of delivery for these weapons. Certain NATO circles are exerting pressure on Turkey to force it to agree to deploy new kinds of nuclear weapons on Turkish territory. Under the circumstances it is not possible for the Soviet Union not to be concerned. This concern has been voiced in an article entitled "Turkey and NATO" in the 28 January 1987 issue of PRAVDA.

On a question by the correspondent on his comments on the development of the military relations between the Soviet Union and Turkey in recent years, Yuriy Babushkin replied: These contacts are useful. Both sides express this view. The development of these contacts will help in the strengthening of mutual trust and good-neighborly relations.

/9599
CSO: 3554/196

SWEDISH OFFICIAL INTERVIEWED ON NORTH EUROPE SECURITY

Moscow NEW TIMES in English No 12, 20 Mar 87 p 8

[Interview with Riksdag Speaker Ingemund Bengtsson by Alexander Polyukhov]

[Text]

Q. There have been allegations in the news media recently that Northern Europe's previously stable situation is deteriorating and that tensions have emerged.

A. For years Northern Europe has presented a model of stability. The countries there are energetically cooperating with one another not only at government and parliamentary levels, but also within the framework of the Nordic Council. A widely ramified system of collaboration has been built up.

Though the countries in the region definitely take different views on how to maintain security, these military and political differences, as the last 40 years have shown, interact in a way conducive to Northern Europe's stability. Consequently, we have been able to escape the adverse effect of the crises and tensions bedevilling other parts of the world.

Northern Europe and the North Atlantic are of increasing strategic significance—due to the emergence of new means of warfare and modified strategic concepts. Northern Europe and, more particularly, Sweden are now more vulnerable. Inasmuch as Sweden is not affiliated to any military alliance and remains consistently neutral, we must uphold our sovereignty in both wartime and peacetime. We believe that we in this way contribute to the maintenance of stability and security in Northern Europe.

Q. The idea of consolidating the nuclear-free status of Northern Europe is being vigorously discussed there. As a nuclear power, the Soviet Union has said it is prepared to take the appropriate steps. What in your view are the prospects for implementing this idea?

A. All the states of Northern Europe are ready to contribute. That is why they have refrained from acquiring nuclear weapons and are not allowing such weapons to be brought into their territories. A nuclear-free zone in this region would reinforce everyone's security. At their forthcoming meeting in Reykjavik the foreign ministers of Denmark, Iceland, Norway, Finland and Sweden plan to establish an intergovernmental committee to frame the complex legal aspects of a nuclear-free Northern Europe. As such a zone has a bearing on the interests of all countries in the region, establishing it should be a common concern based on complete consensus.

The establishment of a nuclear-free zone would be a move towards the deliverance of all of Europe from nuclear weapons. Conversely, progress in nuclear disarmament in Europe generally could substantially facilitate the consolidation of Northern Europe's nuclear-free status.

Q. Carrying your point further, we should see nuclear-free zones as a move towards a nuclear-free world. Do you believe this ultimate goal can be achieved?

A. I think that is for the time being a remote objective. However, for that very reason we should start at once to advance towards it. In this respect it behoves the U.S.S.R. and the U.S. in particular to show the way. They must agree on nuclear disarmament, thereby bringing the world much closer to the nuclear-free chapter in the history of civilization.

Q. How do you see the Soviet-Swedish relationship developing?

A. It is important for neutral Sweden to maintain good relations with all countries, especially its neighbours. There are no major problems in the relationship between our two states. The minor differences are of no significance in principle for consolidating our good-neighbourly relationship. I think we can look forward to further progress in relations between our two peoples.

/9317
CSO: 1812/117

BRIEFS

KOHL ON FRG-USSR RELATIONS--Bonn, 30 Mar (TASS)--Friedhelm Ost, official spokesman for the government of the Federal Republic of Germany, made a statement on behalf of Chancellor Helmut Kohl concerning prospects for the development of relations between the USSR and the FRG. The chancellor of the FRG, the spokesman said, welcomed the fact that as a result of the drafting of an inter-governmental agreement on bilateral cooperation in environmental protection and during West German-Soviet conversations in Moscow involving the Bergerdorf discussion club both sides had reiterated their readiness to develop relations between the two countries at all levels and also to deepen political dialogue. Both sides are aware, Ost said, that the expansion of bilateral relations may result in intensifying positive trends in East-West relations as a whole. This acquires big importance at the current stage when accords on arms control seem to be attainable. In conclusion Friedhelm Ost confirmed the wish of the FRG Government, as was announced in the government statement made by Helmut Kohl, "broadly to develop and deepen relations with the Soviet Union." [Text] [Moscow TASS in English 2045 GMT 30 Mar 87 LD] /9738

ITALIAN-SOVIET MEDICAL COOPERATION--Rome. The Fifth Session of the Joint Soviet-Italian Working Group on Medical and Health Problems met here. I asked G. Nepi, deputy minister of Health of the Italian Republic, to comment on the results of the session. He said, "The current meeting was very useful. In my opinion, its main result is that it defined the main directions of cooperation between USSR and Italiam scientists and new fields of joint research. In view of the fact that in recent years physicians of the entire world have been showing considerable interest in the AIDS problem and are applying the achevements of biotechnology to medicine, the working group decided to include them in the plan for joint research. It seems to me that the AIDS prolem, which fortunately has still by-passed the Soviet Union, but is already acute in the US and certain other states, including West European, cannot be solved within the bounds of one country. I believe that this scourge can be overcome in the shortest time only through the united efforts of physicians of the entire world." V. Pershin, special IZVESTIYA correspondent [Excerpts] [Moscow IZVESTIYA in Russian 17 Mar 87 p 5]

CSO:1807/248-P

TASS DISCUSSES 'TRADE WAR' BETWEEN U.S., JAPAN

LD302030 Moscow TASS in English 2021 GMT 30 Mar 87

[Text] Moscow, 30 March (TASS)--TASS political observer Boris Shabaev writes: Military terms, like "first volley of Washington administration", "Washington launches an offensive", "punitive sanctions" and so on, appear these days in newspaper headlines and TV news programs. Fortunately, the war newspapers are writing about is without bloodshed. However, it will seriously affect the lives of tens of millions of people.

What is meant is a trade war between the U.S. and Japan, with Britain joining in. This time the argument is over products of the Japanese electronics industry, including some 100 types of goods on which Washington is doubling customs duties. London is threatening Japan with the complete banning of operations in Britain of Japanese banks and agent firms.

The 'warring parties' do not stint accusations against each other. The U.S. and Britain are sounding the alarm over Japanese 'dumping' and the rapidly growing deficit of their trade balance with Japan. In its turn, Japan is indignant over the discrepancy between Washington's declarations about its allegiance to the principles of free trade and the openly protectionist measures practiced by it.

According to the newspaper NIHON KEIZAI SHIMBUN, the White House obviously gives preference to sanctions over talks, which can bring about a most dangerous period in relations between the two countries.

It is neither the first nor the last time that such a squabble flares up between major capitalist countries. It reflects not so much the growth of anti-Japanese feelings, as NIHON KEIZAI SHIMBUN tends to regard it, but as another dramatic aggravation of contradictions between imperialist powers in the world market.

The U.S. which is facing the gravest economic problems in the whole of the post-war period resulting from excessive military spendings is desperately looking for the way out of this situation. It seeks to resolve the problems of the enormous federal debt, of the budget and trade deficit, through a well-tried method: By undermining the economic positions of its competitors. The result is 'trade wars', first with the Common Market, today with Japan.

Washington is trying to corner Japan not only with the help of customs sanctions, but also through a deliberate bringing down of the dollar exchange rate with regard to the yen. This measure brought about the growth of prices of Japanese goods, the slowing down of the country's economic growth and the growth of unemployment.

It is difficult to predict the outcome of the current tussle for Japanese businessmen. They do not make public their profits. However, the consequences of all those 'wars' for working people are well known: According to a public opinion poll held by the newspaper ASAHI, 36 percent of the polled said that in the past year the life in the country had become more difficult. One-third of the polled emphasized that they were experiencing the grave consequences of the growth of the yen exchange rate which brought about the decline in the demand for Japanese goods.

There are millions of broken human lives, and not only in Japan, behind all these percent figures.

/12858
CSO: 1812/150

BOOK ON JAPAN-USSR RELATIONS PUBLISHED IN JAPAN

OW081145 Moscow in Japanese to Japan 1200 GMT 7 Mar 87

[TASS Tokyo correspondent Golovnin report]

[Text] A collection of articles on various urgent issues in USSR-Japan relations--"Conditions for Japan-USSR Peace"--was published recently by the Ningen-Sha Publishing House. In the book, noted Japanese experts on foreign policy and foreign economic relations examine the military and political situation in the Far East as well as the history and current state of USSR-Japan relations, and offer suggestions concerning the development of these relations.

Takehiko Yamamoto, a Waseda University scholar specializing in political science, points out that Washington's stern anti-Soviet strategy has deprived the Japanese government of freedom in its activities of promoting relations with the USSR. He writes that the time has now come for Japan to have its own independent organ to promote a dialogue with the USSR which will conform with Japan's interests. In this connection, Yamamoto calls for launching talks on measures to build trust in the Asian-Pacific region as proposed by the USSR, and states that this will be the first step toward creating a world community free from war.

Kiyofuku Chuma, ASAHI SHIMBUN editorial board member, writes that the propaganda campaign carried out in Japan on the so-called threat from the USSR is organized by a group of scholars of Soviet Affairs who are closely connected with the United States through either rightist or CIA channels.

Udai Fujitsuma, political commentator, writes that the so-called northern territorial issue has become Washington's most important means to influence the Japanese government. He also points out that the United States has prevented close contacts between Japan and the USSR, and has drawn Japan into the intensified arms race by artificially stirring up the territorial issue.

In this newly published book, "Conditions for Japan-USSR Peace," it is reported that as early as when USSR-Japan relations were normalized after World War II, the United States demanded that Japan take a stern position on the northern territorial issue and threatened that unless it did so, Okinawa, which was then under U.S. Forces occupation, would not be returned.

Toshiaki Wada, a former Diet member, writes that the northern territorial issue is an important theme preferred by the Japanese ruling clique in carrying out its anti-Soviet and anti-Communist campaigns. Wada points out that the government's demand for the return of the four northern islands has no basis from the viewpoint of either history or international law.

Other specialists state the same view and stress that Japan completely abandoned all its rights over the Kurile Islands when it signed the Peace Treaty of San Francisco.

Katsumi Takeoka, a military affairs commentator and a former high-ranking official of the Defense Agency, points out that Japan's hardened position on this issue seriously hampers the establishment of friendly relations with the USSR, which is necessary for guaranteeing Japan's security.

The authors of the book propose various measures for improving Japan's relations with the USSR. Among these proposals are signing at an early date a peace treaty based on the Soviet-Japanese joint communique issued on 19 October 1956, and signing a mutual nonaggression treaty and a treaty on long-term economic cooperation. At the same time, the authors point out that the position taken by the current Japanese government will not promote the development of Japan-Soviet relations.

/12858
CSO: 1812/150

TRADE, ECONOMIC LINKS DEVELOPING WITH CHINA

Moscow SOVIET EXPORT in English No 6, 1986 pp 32-33

[Article M. Ye. Kiryanova, Head of the China Division, Oriental Department, Ministry of Foreign Trade of the USSR]

[Text] Trade and economic links between the Soviet Union and the People's Republic of China are of long standing. Back in 1949, right after the formation of the PRC, the Soviet Union started rendering the young republic every assistance in its economic development. In 1959, the USSR's share in Chinese foreign trade amounted to 50 per cent. The commodity turnover between our two countries topped 1.8 thousand million roubles. Machines and equipment constituted about 80 per cent of Soviet export to the PRC.

Large metallurgical, power, engineering and other plants were built in China with the economic and technical assistance of the USSR. The Soviet Union regularly supplied the PRC with machine tools, power, building and mining equipment, farm machinery, and other items. The export of Soviet raw materials was of great importance to China. For its part, the PRC exported to the USSR its farm, textile and light industry products and certain kinds of raw materials.

The Treaty on Trade and Navigation, signed by the governments of the USSR and the PRC in 1958, provided the contractual basis for Soviet-Chinese trade and economic relations. It laid down the basic principles of cooperation and a firm groundwork for its development.

In the early sixties, however, Soviet-Chinese relations began to decline with the result that the volume of trade dwindled sharply. By 1970, Soviet-Chinese commodity turnover went down to one-fourty-fourth of the maximum 1959 figure. The USSR's share in Chinese foreign trade dropped to 1.8 per cent.

Since 1971 trade between the two countries began to liven up, and stabilized at the level of 200—300 million roubles a year. However, this volume of trade fell short of the two big neighbouring powers' potentialities and requirements.

The early eighties saw the normalization of trade and economic relations. I. V. Arkhipov, First Deputy Chairman of the USSR Council of Ministers, paid a visit to China at the end of

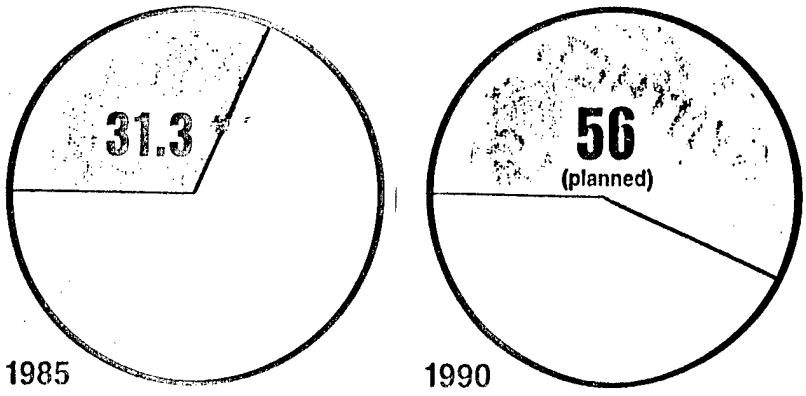
1984. In the course of his negotiations with Yao Ilin, Deputy Premier of the State Council, and other PRC leaders the sides reached agreement on a considerable broadening of business cooperation. The documents then signed provided an important prerequisite for the development of trade and economic links. It was stressed in the Agreement on Economic and Technical Cooperation that the two sides can cooperate in the development, exchange and transfer of production technology; in designing, building and reconstruction of industrial plants and other installations; in the mutual rendering of technical services, in the supply of equipment and materials, in technical personnel training, and in other fields. The Agreement, signed for the term of ten years, will be automatically prolonged every five years given both sides' mutual consent.

The second agreement provided for the establishment of a Soviet-Chinese commission for economic, trade, scientific and technical cooperation, and the third one—for the broadening, on a long-term basis, of scientific and technical cooperation between the USSR and the People's Republic of China. These agreements were signed for the terms of 10 and 5 years respectively, to be prolonged automatically with mutual consent.

The implementation of these agreements will be conducive to the two countries' economic progress, to the raising of their living standards, and to the creation of the atmosphere favourable for the deepening of understanding and trust between the USSR and the PRC.

During the negotiations in Peking the sides pointed out that in the coming new period of Soviet-Chinese business cooperation it would be expedient to go over from one-year to long-term trade agreements. The first long-term agreement on commodity turnover and payments in

THE SHARE OF MACHINES AND EQUIPMENT IN SOVIET EXPORTS TO THE PRC, %



th history of Soviet-Chinese trade and economic relations took effect on January 1, 1986. It runs for a term of five years.

The signing of this agreement is regarded both in the USSR and in the PRC as a major achievement which would help stabilize business contacts and promote the development of mutually profitable trade.

The long-term agreement on commodity turnover and payments in 1986—1990 is based on the undoubtable successes achieved in the development of trade over the past few years, especially in 1985, when the commodity turnover between our two countries increased to 1.6 thousand million roubles which is 64 per cent up on the 1984 figure. The share of machines and equipment in Soviet export topped 31 per cent. In 1985 the Soviet Union supplied China with cars, trucks, planes, helicopters, and large consignments of coal mining, oil drilling and textile industry machinery. The volumes of deliveries were quite large. We exported 37,600 cars to China, for instance. Besides machines and equipment the Soviet Union sold to the PRC in 1985 large amounts of ferrous rolled stock, timber, fertilizers, cement, window panes and other materials.

The PRC has started buying our domestic electrical appliances. Nearly 111,000 domestic refrigerators were supplied to that country in 1985, for instance.

The Soviet Union purchases from the PRC traditional Chinese export items: ores, cotton, raw silk, cotton and silk fabrics, clothes and other consumer goods. We import large quantities of food products from China: cereals, tea, meat, tangerines, apples. We also import from that country fluorspar, talcum, magnesite clinker, etc.

The long-term trade agreement provides for the further growth of mutual trade. Its volume is to grow. In the current five-year period mutual deliveries are to amount to 12 thousand million roubles. In 1990 commodity turnover is to reach three thousand million roubles which is 1.6 times the maximum figure achieved by our two countries in the past (in current prices).

The range of mutual deliveries will broaden. In the current five-year period the Soviet Union to deliver to the PRC 2,700 metal-cutting machine tools, ten sets of power generating units of 200 MW each, 11 mechanized stoping sets, 7,500 railway cars, 100 electric locomotives, tens of thousands of cars and trucks, thousands of tractors, a large consignment of civil planes, poultry farm equipment and other machinery. We shall supply the requisite quantities of spares for machines and equipment.

In 1986—1990, the proportion of machines and equipment in Soviet deliveries to China is to average 50 per cent a year.

In 1986—1990 we shall also supply raw materials to China: 2.8 million tons of steaming coal, 2.15 million tons of iron, 3.5 million tons of carbamide, 16 million m^3 of timber, petroleum products, rolled stock, cement and many other items.

In the current five-year period, the USSR is to help China build seven new major plants and to reconstruct 17 in the power, ferrous and non-ferrous metallurgy, engineering, coal

and chemical industries.

We shall continue to purchase in the People's Republic of China mostly raw materials, food products, light and textile industry products. It is planned to buy 10.3 million tons of cereals and oil-bearing crops, 748,000 tons of meat, 640,000 tons of fruit, 275,000 tons of cotton, large quantities of fabrics, hosiery, garments, furs and downy articles. The PRC will sell 1.5 million car batteries to us. Ores will remain an important item of Chinese export.

The long-term agreement is already being successfully carried out. Both sides are out to surpass the volume of trade agreed upon. In view of both sides' large export potentials, this is a realistic proposition.

The sharp broadening of trade relations has called for improvements in all trade sectors. Soviet foreign trade organisations are increasingly active on the Chinese market. An exhibition of business information on Soviet export commodities was held in three big cities of the PRC—Peking, Nanking and Guangzhou—recently. The exchange of national exhibitions between the USSR and the PRC is assuming great importance.

The PRC's trade and industrial exhibition was a great success in Moscow recently. A similar Soviet exhibition—the biggest one over the past thirty years—in China had the purpose of acquainting Chinese experts and the public with the Soviet Union's achievements and export potentialities.

The system of international goods carriage between the USSR and China is improving.

V/O SOJUZVNESHTRANS has promptly set up transportation and forwarding bases in Taldi-Kurgan and Rybachy for the trucking of cargoes through the frontier posts of Khorgos and Turugart to the Sinkiang-Uigur Autonomous Region of the PRC and back.

In June, 1986 V/O SOJUZVNESHTRANS and the Chinese national foreign trade transport corporation Sinotrans signed a general agreement on the organisation of foreign trade goods carriage and forwarding.

Frontier trade, resumed in 1982, makes a substantial contribution to the development of Soviet-Chinese commodity turnover. The Dalprigran and Vostoksinkiangtorg specialized firms have been formed in the Soviet foreign trade organisations DALINTORG and VOSTOKINTORG to do this trade. In 1985, the volume of frontier trade amounted to 24.2 million roubles. This trade helps draw into the sphere of mutual deliveries new commodities essential to the economies of Soviet and Chinese frontier areas and improving supply there.

The Soviet-Chinese Commission for Economic, Trade, Scientific and Technical Cooperation had its first session in Peking in March, 1986 and adopted concrete resolutions on a number of important problems connected with bilateral agreements.

The two sides pointed out with satisfaction that trade and economic relations between the two countries had been developing continuously over the past few years. The range of mutual deliveries kept broadening.

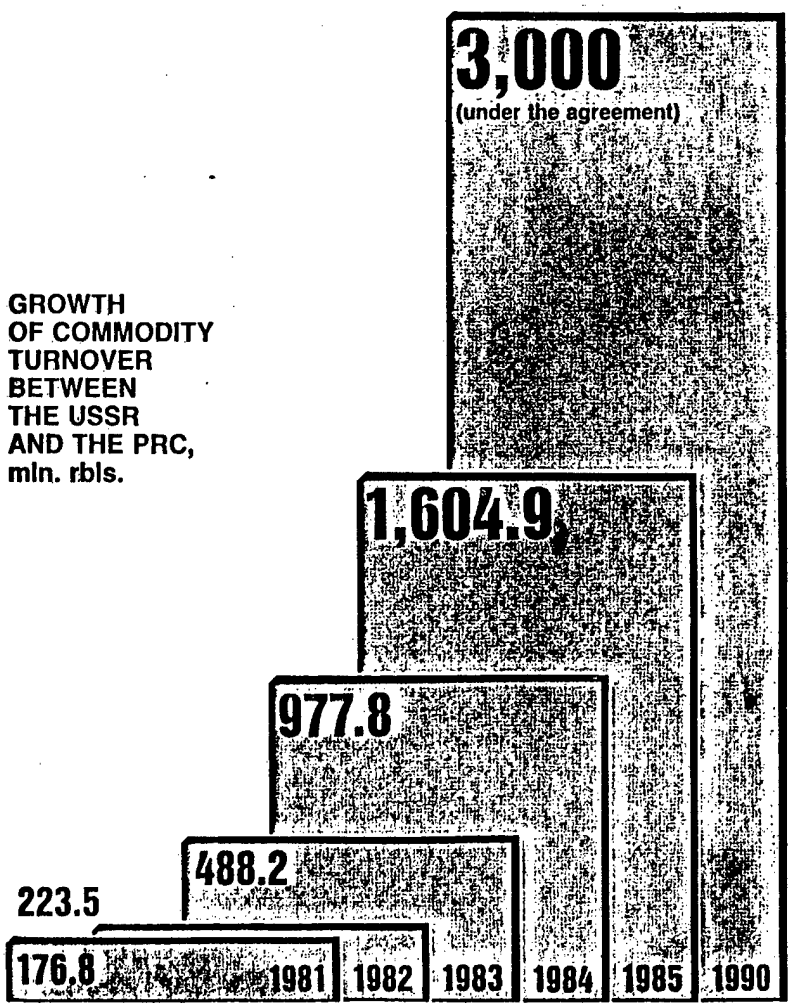
The Commission arrived at a unanimous conclusion that the USSR-PRC trade would continue to grow on the basis of long-term commodity turnover

and payments agreements for 1986—1990.

It was decided to form, within the framework of the commission, a permanent working group for transport and a permanent subcommission for scientific and technical cooperation.

The sides pointed out that the results of the first session of the Soviet-Chinese Commission would give an added impetus to cooperation.

The Soviet Union attaches great importance to the restoration of good-neighbourly relations with China. The dynamic development of trade makes a real and weighty contribution to this process.



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CSO: 1812/119

DPRK-USSR TELEVISION COOPERATION AGREEMENT

SK110815 Moscow International Service in Korean 1130 GMT 10 Mar 87

[Text] A group of specialists of the DPRK Radio and Television Broadcasting Committee, who received training in the Moscow Central Television Station and in the television station in Minsk, the capital of Belorussian SSR, last December, have stayed in our country.

Prior to returning to their country, the reporter of this radio station had an interview with Comrade Yi Tong-suk, director of the Technical Department of the Television Bureau of the Korean Central Broadcasting Committee:

[Begin Yi Tong-suk recording] At a time when the traditional friendship between Korea and the Soviet Union is developing excellently each day, we visited the Soviet National Television and Radio Broadcasting Committee and realized a technological exchange between our two countries in domain of television broadcasting technology. We are very pleased over this.

During our stay in Moscow and Minsk, we personally witnessed that the Soviet people have attained a number of successes in their socialist construction by upholding the decisions of the 27th CPSU Congress. We also became aware of the successes and experiences obtained by the Soviet people in the sector of television and radio broadcasting technology.

We also rejoiced over the fact that technical functionaries of the two countries have had opportunities to frankly exchange opinions concerning various technical problems in the sector of television broadcasting technology.

Technical progress in television is of great significance in developing television transmissions. Therefore, I believe it is beneficial for the technological development of television broadcasting in the two countries that technical functionaries of Korea and the Soviet Union frequently meet each other and exchange opinions concerning television technology.

That the broadcasting organizations of our two countries signed an agreement in February this year is a good example of this. We hope that the exchanges between our two countries in the sector of television broadcasting technology

will be further strengthened. I will return to my country with good impressions of the warm hospitality extended to us from the Soviet people and the functionaries in the television broadcasting field while staying in the Soviet Union.

I wish the Soviet people greater successes in their socialist construction and the struggle to safeguard world peace. I also wish the people in the field of the Soviet television broadcasting successes on the path of modernizing the television technology sector.

/8309
CSO: 4107/162

BRIEFS

JAPAN BEGINS RECEIVING SOVIET TV--Tokyo, 17 March (TASS)--As of today millions of Japanese will have the possibility to see TV news from the Soviet Union. Terebi Asahi, one of the biggest television companies in the country, has started receiving TV programmes from the USSR via a Soviet communications satellite. They will be used as topics in news programmes. A social function was held today at the Terebi Asahi television centre to mark the commencement of reception of Soviet transmissions. A number of items from the Vremya programme will be used in the six o'clock newscast. "This is a very gratifying event," TASS correspondent Aleksandr Anichkin was told by Keizo Obuchi, member of parliament from the ruling Liberal-Democratic Party. "To see means to believe. Now that Japanese will be able to see Soviet programmes this will give us a possibility to know and understand the Soviet Union better." [Text] [Moscow TASS in English 0959 GMT 17 Mar 87 LD] /12858

CSO: 1812/150

U.S. MILITARY PRESENCE IN DIEGO GARCIA, INDIAN OCEAN SCORED

PM241239 Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Mar 87 p 3

[A. Stepanov article: "Springboard for Aggression"]

[Text] Diego Garcia... A barely noticeably circle of land in the open Indian Ocean. Some 2 decades ago this island would probably have been considered a promised land--the song of birds of paradise could be heard and there was tropical greenery and a white necklace of breakers. It had a few hundred inhabitants, for whom Diego Garcia was home--they fished and grew coconuts.

The former serenity is now gone forever. Now alongside the deep lagoon in the center of the atoll the Pentagon has created what is essentially an air and naval base complex and a number of communications centers. The largest aircraft, such as B-52 strategic bombers, are able to land there. There are underground dumps on the island intended for supplying major naval forces--strike carrier groups or missile-launching submarines, for instance. There is a powerful radio broadcasting center and a radio relay station.

But that, alas, is not all. The Western press has already featured reports that Diego Garcia is destined to play a part in the implementation of the "star wars" program. The fact is that construction is under way there of components of the Spacetrack space arms targeting system. As for the siting of nuclear weapons stockpiles on the island, the Pentagon does not rule out that possibility "in the event of a crisis in the region." The Pentagon clearly retains the right to define such an eventuality.

Diego Garcia is the largest base in the Indian Ocean, and it comes under CENTCOM--the U.S. Central Military Command. CENTCOM's zone of operations includes 19 Indian Ocean states. This command already has a force of up to 300,000 men at its disposal. By 1989 the Pentagon strategists plan to expand the potential of its operational headquarters in the Indian Ocean so much that there will be no fewer than 450,000 soldiers under arms. The U.S. military department has allocated the gigantic sum of 14 billion dollars for CENTCOM's activity. It is no accident that the ILLUSTRATED WEEKLY OF INDIA called this the "largest military program outside America."

Just why does the United States need around 30 bases and military installations in the Indian Ocean? Why do two strike groupings comprising aircraft carriers equipped with nuclear weapons cruise its waters almost permanently and nuclear-armed B-52 bombers fly over the ocean? Finally, why are plans being nurtured to station permanently in the region 2-3 "Ohio"-class submarines capable of launching 24 Trident ballistic missiles, each of which carries 8 warheads yielding 100 kilotons? The foreign press has stressed that Trident's destructive potential is equivalent to several World War II's! So why does the United States still need such a large amount of deadly arms in the Indian Ocean?

To answer those questions one need only look at a map. The Indian Ocean lies at the intersection of sea and air lanes linking Europe, the Near East, and East Africa with Southeast Asia, the Far East, Australia, and the Pacific. It is these routes that the United States intends to keep under permanent control. Furthermore, in the Pentagon generals' plans the Indian Ocean is seen as a potential springboard during a new world war.

Undoubtedly, a reason for the expansion of the U.S. military presence in the region is the safeguarding of U.S. industrial and banking monopolies' interests. For many years now they have exploited the natural riches and human resources of the Indian Ocean states. According to the very well-informed journal FAR EASTERN ECONOMIC REVIEW, U.S. investment in these countries amounts to 10 billion dollars. And it is so convenient to exert military pressure on the independent states' foreign and domestic policies on the pretext of "protecting strategic interests." But, calling a spade a spade, it must be said that Diego Garcia is nothing less than an important link between major groups of military bases--the Pacific and Far East bases in the countries of Southeast Asia and the western Pacific, and the European and Near East bases encompassing the West European NATO states and the Mediterranean. But it is far more advantageous to call the atoll a bridgehead in the struggle against the "Soviet threat"--period.

Nonetheless, the Soviet-U.S. bilateral talks on limiting and subsequently reducing military activities in the Indian Ocean were broken off at Washington's behest. They were broken off because they did not fit in with the plans to step up the Pentagon's activity in the region. For the same reason the United States and its allies have for many years been blocking the work of the UN Special Committee on the Indian Ocean.

The Soviet Union's position on this question is that our country actively strives for the speediest implementation of the UN declaration on turning the Indian Ocean into a zone of peace. The USSR is the only state which is not a country of the region to have agreed with the principles of the proposed international conference on the Indian Ocean and to insist on its immediate convening. The new Soviet initiatives envisage substantial reductions in naval activeness in the Indian Ocean, the use of confidence-building measures, and guarantees of the safety of shipping and air communications.

/12858
CSO: 1807/241

UN HUMAN RIGHTS REPORT ON AFGHANISTAN SAID TO BE FALSE

Moscow IZVESTIYA in Russian 11 Mar 86 p 4

[Article by D. Meshchaninov: "Warning: Fraud"]

[Text] The UN Commission on Human Rights published a report in which it says that the Afghan armed forces are committing "murder and violence against the peaceful population", they are victimizing opponents of the regime and allow "other crude violations of human rights in Afghanistan." The report asserts that the Afghan authorities did not permit members of the commission to "conduct local investigations."

Our IZVESTIYA correspondent has turned to the official representative of the Ministry of Foreign Affairs and the Chief Political Directorate of the DRA Armed Forces with a request to comment on this report.

Abdul Hali Abavi, chief of the Department of the UN and International Relations in the Ministry of Foreign Affairs stated:

This fraud was concocted by a certain "specialist on Afghanistan", F. Armarok, whose well-known anti-Afghan position guaranteed that the document would be received as such which is today necessary for the enemies of the DRA. He used doubtful sources and did not display a desire for contacts or cooperation with the official authorities of the country about whose civil rights he undertook to write.

There is not a line of truth in the report about the achievements of the popular authorities in the spheres of education, health care, the economy, or agriculture, in broadening the base of the revolution. There is not a word about respect for Islam, about the real successes of the policy of national reconciliation proclaimed at the extraordinary plenum of the PDPA Central Committee.

In place of this there is the standard collection of lies and insinuations. It is also a lie that the members of the commission were forbidden to "conduct local investigations". No one came to us with such a request. Moreover, before the opening of the session, an official letter under the signiture of the DRA Minister of Foreign Affairs was sent to the UN Commission on Human Rights in which the readiness to accomodate the representatives of the commission was expressed.

Even earlier, a document on the atrocities of the counterrevolution against the peaceful population, prepared by the DRA Association of Jurists, was sent to Geneva. However, since that time we have not received an answer.

Our foes constantly assert that the DRA is a "closed country." But this is also a lie. It is sufficient to say that already this year representatives of the largest Western newspapers and journals, information agencies and radio and television companies and members of the International Committee of the Red Cross visited Afghanistan. A delegation of this international organization is currently in Kabul.

Major-General Shaykh Mohammad Bovar, first deputy chief of the Main Political Administration of the DRA Armed Forces, indicated:

In the document the UN Commission on Human Rights turned everything upside down. The DRA Army renders all-around aid to the peaceful population in reconstructing schools and mosques, houses and irrigation ditches and clears mines from fields and bridges. It delivers necessary goods, medicines, seeds and fertilizers to the most hard to reach corners of the country. The Armed Forces help refugees returning to their homeland to reach and settle in their local areas. These are only some of the peaceful and constructive functions of military personnel under the conditions of national reconciliation.

Such are the facts. But for some reason the authors of the "report" stubbornly do not note them. Moreover, the crimes of the counterrevolution are attributed to the army of the DRA. It is not difficult to guess with whose blessing this typical anti-Afghanistan libel was issued. With the blessing of those who lavishly supply the dushmans with modern weapons and money; of those who are interested in continuing the blood-letting.

CSO: 1807/226

USSR SHIPS SEARCH VIETNAMESE CONTINENTAL SHELF FOR OIL

Moscow PRAVDA in Russian 13 Mar 87 p 2

[Article by PRAVDA stringer V. Ryabchikov: "To the Petroleum Deposits"]

[Text] Yuzhno-Sakhalinsk. The motor ship Trias sailed from the port of Korsakov. It set a course for the shores of Vietnam.

Another specialized ship the Diabaz also departed for that destination several days earlier. For several months both vessels, which belong to the Far East Maritime Engineering and Geological Expedition, will explore the continental shelf of the south of Vietnam. This work is being carried out at the request of the joint Soviet-Vietnam enterprise Vyetsovpetrol, which is engaged in prospecting for and exploiting offshore petroleum deposits.

This is not the first year the Sakhalin maritime petroleum prospectors have assisted friendly Vietnam in developing underwater petroleum sites. The first Vietnamese petroleum was obtained from a well drilled by specialists of the ship Mikhail Mirchink. The crew of the Mikhail Mirchink was given a high Vietnamese award for performing its international duty brilliantly.

CSO:1825/144-P

IRAN'S REJECTION OF PEACE PROPOSALS DENOUNCED

NC061357 Moscow Radio Peace and Progress in Persian to Iran 1630 GMT 5 Mar 87

[Unattributed commentary]

[Excerpts] Iranian forces have launched a fresh attack on the Iran-Iraq front under the name of Karbala-7. This time the operations are taking place in the northern sector of the front, in Kordestan.

The slight hopes for a political solution of the conflict that emerged after Baghdad and Tehran committed themselves to end air attacks on cities have now turned to dust and dismay.

It is worthy to note that Iran's military units were diapatched to the fronts for a fresh attack, immediately after Shaykh Jabir al-Ahmad al-Sabah, the Kuwaiti Amir, and the Islamic conference organization announced their intention to take new steps to end the bloodshed. The Iranian leadership is apparently ignoring the sagacious calls heard from UN headquarters, from nonaligned and socialist nations, from all parts of the extensive Muslim world and, finally, from its own people. It is the toiling people of Iran who carry the full burden of the pains, sorrows, and calamities that are brought on by the war.

In view of all the problems faced by Iran, it is very natural and understandable to wonder what the situation will be like in the future and what can possibly lead the way out of the impasse of this destructive, cruel, and completely meaningless war as far as true national interests are concerned. It should be said that more and more Iranians are asking this very question. Logic shows that the way out of this impasse is to end the bloodshed and fratricide, especially since Baghdad has repeatedly stated that a just, respectable, and honorable peace should be reached. However, the spirits ruling the Iranian leadership are different. All efforts for a cease-fire and any peace-seeking effort are strictly rejected.

Iran's President Khamene'i has stated that the fighting has reached a critical stage and that the countdown for the final attack against the Iraqi regime has begun. These remarks mean that extremely strong clashes will take place in the future once again, that mountains of corpses will be formed once

again, that equipment will be destroyed once again, that land will be scorched by explosions once again, and that more memorial services will be held for the dead. Once again. It should be noted that such statements have been repeatedly made in the past, too; however, the blood-red flame of this war has been burning for the 7th year now.

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CSO: 4640/99

BRIEFS

SOVIET SUPPLEMENT TO INDIAN NEWSPAPER--(TASS) In the regular issue of their newspaper subscribers of the authoritative Indian organ of business circles ECONOMIC TIMES received a special supplement (EKONOMICHESKAYA GAZETA), the title of which was printed in Russian and English. The multi-page issue was prepared by the editors of EKONOMICHESKAYA GAZETA and V/O Vneshtorgreklama. The issue contained an interview with Deputy Chairman of the USSR Council of Ministers V. M. Kamentsev, articles by Chairman of USSR GKES (State Committee for Foreign Economic Relations) K. F. Katushev, Chairman of the Presidium of the USSR Chamber of Trade and Industry Ye. P. Pilovranov, and directors of a number of other Soviet ministries and departments which detail the foreign economic activity of the Soviet Union, as well as prospects for Soviet-Indian trade and economic cooperation. "The issuing of the special supplement about the USSR and Indian-Soviet cooperation will doubtless be of great interest to Indian firms and companies and individual businessmen," R. K. Roy, an ECONOMIC TIMES editor, told a TASS correspondent. "This is an original window to the tremendous and interesting business world of the Soviet Union and a visiting card of Soviet foreign trade organizations. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 11, Mar 87 p 24]

CSO: 1825/140-P

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